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MODERN SIGNALING

*—has an important bearing on
increased safety and facility of
train operation*

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Will Wheeler and Lea Carry On In the Esch-Cummins Tradition?

There are times which invite large and courageous action in the field of public affairs—just as there are other times when circumstances permit, even to political genius, only picayune temporizing with details. The first state—that of a perfect stage-setting for definite dealing with the fundamentals of national policy toward transportation—is now clearly at hand. Will the men who have the power to act, also have the courage and imagination to do so? Will they sense the fact that the opportunity lies before them *now* to do the country a service which will be long and gratefully remembered? Will they awaken to the realization that only as conscientious Americans, and not as representatives of class or sectional interest, can they hope to surmount a crisis which is national, and neither sectional nor the primary concern of particular economic groups?

Preserving the American Standard of Living

The present crisis is national because it involves the future economy of inland transportation in the entire United States. As Paul Van Zeeland of Belgium wrote in his recent report on international trade, *the issue at stake is one of "an increase in the real cost of living, that is to say, a lowering of the standard of life of the population."* We are building transportation plant in this country regardless of cost. We have set up artificial handicaps tending to divert transportation from channels of the greatest economy to those of the least. The time has come when the only part of our transportation plant which still operates largely under recognized economic principles has been driven to the wall. If it succumbs, the entire transportation system of the nation will be governed by political rather than economic forces. In a continental area such as the United States reasonable inland transportation costs are vital to the well-being of the population. If economic principles are supplanted by political direction in the conduct of this vital business, costs must inevitably rise and the standard of living of the people as a whole will suffer.

In such a crisis it is of the utmost importance that a solution be first attempted entirely from the national point of view—and not from a patchwork compromise put together after listening to the claims of conflicting interests. To quote again from Van Zeeland, "Let us

try to find the way for a practical solution, by pretending that it [the problem to be solved] can be artificially isolated from the political factors which surround it and which impose upon it their conditions." That is to say, try first to arrive at a plan which will solve the problem—and then make such concessions to particular interests later as are necessary to secure adoption of the plan. But don't make the mistake of first calling in the particular interests with the assumption that a plan in the national interest can be compiled out of concessions to the selfish interests of all the contending parties.

What is Wrong With the Railways?

What is wrong with the railways can be only too easily shown. It is that their net operating income has declined to a level continuance on which would inevitably mean, first, general bankruptcy and, second, government ownership, because only government can for any considerable period keep any industry in operation at a loss.

Net operating income is the part of their earnings the railways have left after paying their operating expenses and taxes. In an accompanying table are given statistics showing the amount of net operating income earned by the Class I railways in the last quarter of

Net Operating Income, Class I Railways, Last Quarter of Each Year 1928-1937, Inclusive

	Net Operating Income	Annual Rate of Return (Per cent)		Net Operating Income	Annual Rate of Return (Per cent)
1928 ...	\$373,871,000	5.03	1933 ...	\$132,595,000	1.93
1929 ...	311,735,000	4.04	1934 ...	118,946,000	1.79
1930 ...	223,692,000	3.10	1935 ...	175,696,000	2.57
1931 ...	121,863,000	1.74	1936 ...	232,782,000	3.53
1932 ...	130,875,000	1.80	1937 ...	119,161,000	1.66

each of the last ten years, and also the annual rate of return on investment in property that it represented. It will be noted that the amount earned in the last quarter of 1937 was the smallest in the last quarter of any of the ten years excepting 1934, and that the annual rate of return on investment that it represented was the smallest in any year.

Compared with 1928 the decline in both net operating income and annual rate of return was 68 per cent. The amount of net operating income earned in the

last quarter of 1931 was about \$122,000,000, or at an annual rate of 1.74 per cent. Railway managements were so alarmed by the approach toward disaster indicated that they appointed a committee of nine presidents to negotiate with leaders of the railway labor unions. This negotiation in January, 1932, resulted in an agreement for a 10 per cent deduction from basic wages which was in effect throughout the rest of 1932 and throughout 1933 and the first one-half of 1934.

Rates Down—Wages and Taxes Up

Both the net operating income and the rate of return earned in the last quarter of 1937 were less than in the last quarter of either 1931, 1932 or 1933. As a result of advances made on August 1 and October 1 the average railway wage per hour was, in the last quarter of 1937, and is now, at least 15 per cent higher than in the last quarter of 1931 and 18 per cent higher in the last quarter of 1932. And yet no suggestion has been made to follow the precedent set six years ago of seeking at least a temporary deduction from basic wages; and President Roosevelt is urging industry to maintain wages.

Why the net operating income earned in the last quarter of 1937 was so small is clearly shown by statistics for the months of November, 1927, 1932 and 1937, given in an editorial in the *Railway Age* of February 5. Freight loadings in November, 1937, were 22 per cent and gross earnings almost 27 per cent larger than in November, 1932. But taxes were 35 per cent larger, the average wage per hour 18.2 per cent higher and total wages paid 38 per cent greater, while, on the other hand, average freight revenue per ton-mile was 10 per cent smaller and revenue per passenger-mile was 15.6 per cent smaller.

There is no solution of the problem the railways present excepting the adoption of measures that will widen the margin between their gross earnings, on the one hand, and their operating expenses and taxes, on the other—that is, increase their net operating income. There is no political means of solving this problem, because there is no means of solving it that will not cost one or more influential political interests something. It is an economic problem; and it must be solved by economic means or not at all.

A National Program, Not a Crazy Quilt

The list of men whom the President has invited to confer upon the problem gives hope that the crisis will be approached from the national, rather than sectional or class, interest. The names made public in this connection, in addition to that of Chairman Splawn of the I. C. C., are as follows: Henry Bruere, president of the Bowery Savings Bank, New York; Carl R. Gray, vice-chairman of the Union Pacific; Commissioners Joseph B. Eastman and Charles D. Mahaffie; Senator Wheeler, chairman of the Senate Committee on Interstate Commerce; Senator Harry S. Truman;

Representative Clarence F. Lea, chairman of the House Committee on Interstate Commerce; George M. Harrison, president of the Brotherhood of Railway Clerks; Ernest J. Draper, assistant secretary of commerce; Chairman Jesse H. Jones of the Reconstruction Finance Corporation; Chairman William O. Douglas of the Securities and Exchange Commission; and W. W. Alexander of the Farm Security Administration.

We believe that the panel might well be enlarged to include representation from the National Resources Committee and other competent and public-spirited men who could be counted upon to contribute genuine wisdom to this conference, and who could also be relied upon to approach the problem from the viewpoint of broad social interest. A few names which occur in this connection are the following (we could name many more):

Adolph Berle, Jr.—probably the best informed critical student of corporate practice in the country, and a man in whose social-mindedness the Administration has confidence. He has just been named Assistant Secretary of State.

J. W. Barriger—chief examiner of the Railroad division of the R. F. C., who probably has as much detailed knowledge of many railroads as any other man in the country.

Secretary Wallace—who so far has looked upon the railroads primarily from the immediate self-interest of agriculture, but who has the knowledge and the spirit to enable him to look at them from the standpoint of the broad social interest, if he is given that responsibility.

Dr. Harold G. Moulton—the president of the Brookings Institution, who is probably as well-informed as any man in the country as to the way the transportation industry meshes with the economic life of the country—forming a link upon which the efficiency of the whole machine depends.

With the predominance of the national interest as the accepted avenue of approach, and competent men to discuss it, the next essential is that they be given time to do a thorough job. The amount of information and the complex problems to be canvassed and evaluated is enormous. Many days—perhaps many weeks—of hard work would be required to sift the wheat from the chaff and arrive at a basis of fact and opinion upon which competent and public-spirited men could reach some measure of agreement.

What Is the Alternative?

In the above we have outlined a point of view and a method of approach toward the present crisis in transportation which we believe is the most likely to achieve a genuine and realistic solution. Probably we are going to have some attempt at legislation anyhow. If the approach suggested is not followed, probably the one that will be followed is to invite all the various conflicting interests in to state their case—and then to try to harmonize their opposing points of view. There have been occasions when the only serious questions of transportation policy were particular, and could thus be dealt with piecemeal—times when the only difficulties to be surmounted were adjustments between the conflicting claims of contending parties. That is to say, the transportation "body" as a whole was healthy, and an occasional bit of minor surgery here and there, to repair cuts and bruises to this or that member, was all that was needed to keep the "body" functioning

normally. But a major illness affecting the entire "body" is something entirely different, requiring heroic treatment far beyond external medication and a bandage here and there.

The Whole Is Greater Than Its Parts

Let us look briefly at the situation of some of the parties at interest in the present transportation crisis, and see whether, by focusing attention on the particular interests of these groups there is any hope, at the same time, of curing the ills of the "body" as a whole. Some of the more important of these particular interests are: railway labor, railway security owners, shippers, manufacturers of railway materials, particular territorial interests.

Railway labor.—Organized railway labor has worked perennially for two objectives, viz., shorter hours and higher hourly wages, and it has moved a long way in the direction of both of these objectives. In November, 1937, average hourly compensation of employees was 75.2 cents, or 15 per cent higher than in November, 1927. But in November, 1937, the total number of employees working on the railroads was 638,918 less than in November, 1927—a decline of 37 per cent—and total compensation paid to employees was almost 31 per cent less than in November, 1927. Labor union leaders contend that high wage rates "increase the purchasing power of the masses"—but it certainly cannot be true that the 165 millions the railways paid out in wages last November represented as much purchasing power as the 240 millions they paid out in November, 1927.

Clearly, an approach to railroad problems solely from the viewpoint of traditional labor union policy offers no solution to those problems—not even from the point of view of railroad employees themselves.

Railway security owners.—By and large, security owners are disorganized and unalert to their rights. The largest and most powerful of them, when they see a period of trouble ahead, instead of standing their ground and defending themselves, seek rather "to get out while the getting is good." They cannot, however, be ignored, because, while they apparently will not defend themselves from loss of present investments, their future investments are necessary to continuation of the industry, and will not be forthcoming unless future treatment of security owners promises a great deal more than the recent past has held for them.

Security owners must be considered, then, but it is quite unrealistic to suppose that the problem of the railroads can be solved primarily from the standpoint of an inarticulate and inchoate body which speaks only by proxy, if at all.

Shippers.—Your typical shipper (there are honorable exceptions of course) is a man who wants to eat his cake and have it too. That is to say, he wants low rates on coal and other raw materials to continue as in the past, while being privileged to ship his higher-rated traffic by truck, thus taking advantage of the "econo-

mies" of this newer form of transportation. This anomalous stand of the typical "shipper" arises from the fact that his mouthpiece is usually a traffic manager who holds his job by his performance in reducing freight "bills." If the reduced freight "bills" are more than offset by increases in taxes for highways and waterways, such increases are not charged up against his department.

If heads of shipping industries were the policy-makers of those industries as regards transportation, it might be safe to entrust a major share in the solution of transportation problems to shippers, but as long as shippers' policymakers are to a large degree men whose interests are particularistic, and not identical with that of the industry they serve, it is obviously unsafe to pay too much attention to "shipper opinion." We must know first whether it is Bergen or Charlie McCarthy who is doing the talking.

Suppliers of railway materials.—This group is larger and of more social and economic consequence than is generally realized. The great steel, coal and lumber industries with their hundreds of thousands of employees—as well as thousands of other industries large and small, and their employees—have a direct stake in the outcome of the present transportation crisis.

It would be unwise, of course, as well as politically inexpedient, to entrust to spokesmen for these industries the dominant voice in bringing a solution to transportation problems. However, the danger is not that they will be given greater consideration than they deserve, in the public interest, but rather that they will be inadequately considered.

Particular territorial interests.—Every section of America has its local zealots who look upon the national government, not as an instrument to "promote the general welfare," but rather as an agency to advance their particular welfare, if need be at the expense of the nation as a whole. Into this category must be placed all such groups who want the local cow-pasture creek made into a commercial waterway, regardless of expense or economic justification. It is idle to suppose that a transportation problem, or any other problem for that matter, can be solved by giving every geographical section a "transportation advantage," at government expense, over every other section. In the end these "advantages" cancel each other out, and the supposed beneficiaries are left to pay the bills for something they did not get.

There is nothing which selfish local interests can contribute to the solution of any problem from the viewpoint of the national welfare—national welfare being a concept which is beyond their comprehension, except perhaps in time of war.

Must We Wait?

Must we wait, then, until all these contending groups, and many more like them, have said their say before we can even begin to find a solution for present conditions? If so, then it is just too bad.

New Pendulum-Type Cars Tested

Articulated two-car unit, built in California, embodies unique principles of design

WITH a view to providing minimum weight for economy, low center of gravity, large design factors of safety and smooth riding on existing track, a new "pendulum" type of passenger car has recently been designed and an articulated two-car unit built and placed in test service on the Atchison, Topeka & Santa Fe Harbor district lines near Los Angeles, Calif. Development work on this equipment has been sponsored by C. T. Hill, son of Louis W. Hill, retired chairman of the Great Northern. The Santa Fe has co-operated to the extent of providing motive power and testing facilities.

Principal interest in the new design centers about the suspension system, or method of mounting the car on the truck which departs completely from standard practice. The car body is virtually suspended from the truck, floating on soft vertical coil springs in a plane above the center of gravity of the body. These springs permit, through horizontal deflection, all of the necessary truck motion relative to the body, this motion being positioned and controlled by a pair of horizontal links, elastically restrained by rubber, acting between the body and the truck frame at a height well above the body center of gravity.

General Description of Experimental Unit

The principal springing of the body, being above the center of gravity, may be as soft as desired, and any tendency for body roll on curves is in the direction to correct for uncompensated side force on curves. This action or "bank" is in direct contrast to the behavior of a standard car and truck leaning outwardly on curves insufficiently superelevated. Likewise, the lateral restraint of the car body in this new suspension system may be designed for as low a frequency as required, since the action is not restricted as in a standard truck by swing hanger length and possible bolster travel. For

both the vertical and lateral motion, simple shock absorbers are applied to dampen resonance or harmonic oscillation.

The experimental unit, illustrated, consists of two bodies suspended from three trucks, the center truck forming an articulated connection between the bodies.

Outside views convey the erroneous impression that the cars are small. However, the maximum inside width of 9 ft. 9 in. is several inches greater than many standard cars. In spite of a low overall height of 11 ft., an adequate inside height of 8 ft. 2½ in. is made possible by a 30-in. floor level. The truck suspension structure is housed by well-insulated pockets within the body. The overall length of the front body is 70 ft. and that of the rear body is 79 ft. Since the gross weight of the articulated vehicle is only 65,000 lb., wheel loads are low.

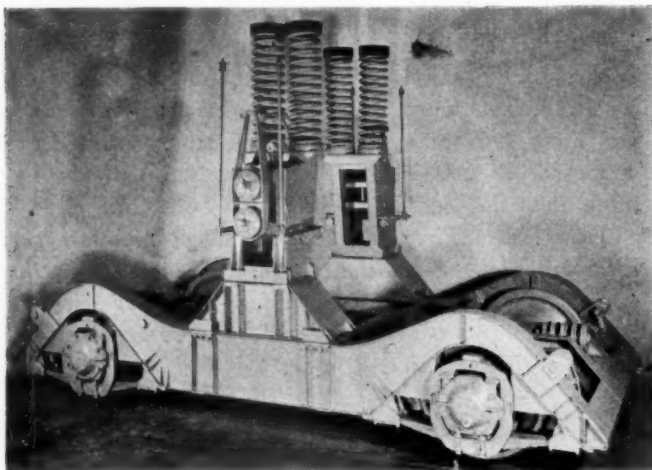
The front end of the front car is fitted with a special drawbar to attach to a standard six-wheel-truck club car. A raised platform in the front test unit allows easy passage into the standard car. The tail end of the rear unit has an overhang of 19 ft. from the center of the rear truck. The center of gravity of the entire car is approximately 45 in. above the rails.

The truck itself is a substantial structure, fabricated of low-gage high-tensile steel arc-welded and stress-relieved. The truck frame rests on semi-elliptic springs carried by journal-box hangers, which in turn are supported on rubber shear pads on the journal boxes to permit a small transverse movement of the axles. Since in service there are no moving metallic contacts or sliding surfaces where wear or play can develop, the wheels, axles, bearings and frame are relieved of heavy shock and impact loads. Brake thrust, but not torque, is carried by the leaf spring which has been designed for this duty. The entire journal assembly is provided with guard flanges made like a loose pedestal guide to confine the journal box in the event of failure of rubber parts or springs.

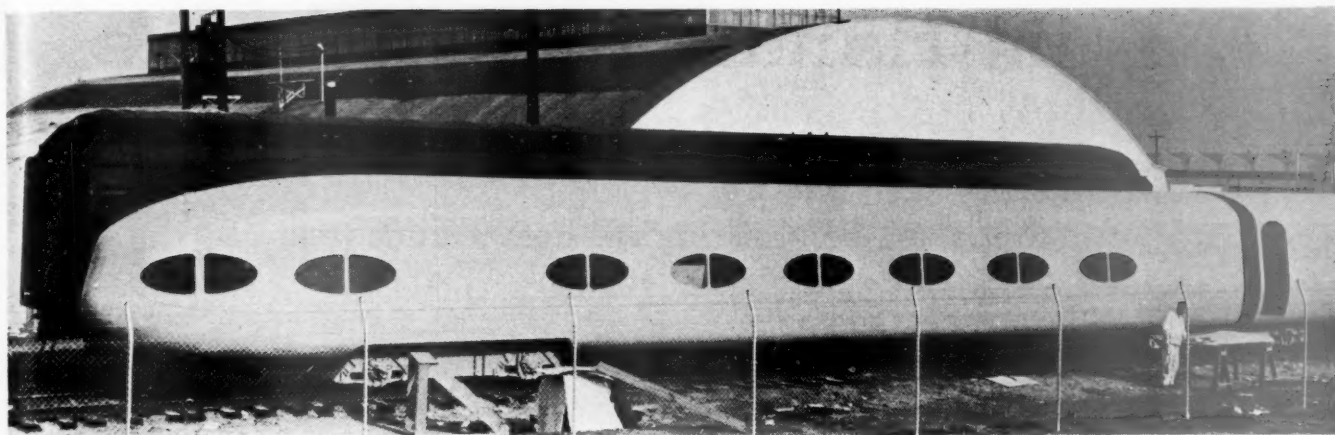
Details of the Truck Design

The end trucks have a 9-ft. wheelbase. A 12-ft. wheelbase for the articulating truck is possible because the load from the body is carried directly over each axle and thus the frame is subjected to no bending moments due to body load. The articulating truck frame has been made separable so that cars articulated at both ends can be uncoupled and switched to provide flexibility in train make-up. The Bethlehem rolled-steel wheels have cylindrical treads and a diameter of 30 in. Axles are hollow-bored and are fitted with Fafnir ball-bearing journals.

A standard clasp-brake system is employed, operated by Westinghouse air-brake equipment. On the end trucks one air cylinder operates the shoes on all four wheels through a simple, fully equalized linkage; each half of the articulated truck has its own brake system with an air cylinder operating the shoes on two wheels. A simple method of automatic slack adjustment is pro-



Fabricated Steel Truck which is Designed to Support the Car Body Above the Center of Gravity and Provide a Pendulum Motion, Rubber-Cushioned and Controlled



The Rear Body of a Two-Unit Articulated "Pendulum" Type Car which Incorporated Unique Features of Construction

vided. The total weight of each 9-ft. full truck, completely equipped, is 8,800 lb., and the 12-ft. articulated truck weighs 10,900 lb.

How the Suspension System Works

The truck view shows two towers bolted rigidly to the truck frame proper so that these parts function as a unit; however, for removal of the truck from the car, the towers may remain suspended within the body pockets so that the body need not be raised to an excessive height. The coil springs mounted on the towers carry the body with a static deflection of about 8½ in., which is much softer springing than is usually provided for railroad cars. These springs are specially designed to allow lateral as well as axial movement. The rubber-cushioned lateral restraint arm seen on the side of the tower connects to the body through a link located at a level about 20 in. above the center of gravity of the car body proper. This lateral control system is designed to furnish a soft restraint at the center of its range and stiffen gradually as it is deflected by sustained side load. Longitudinal positioning of the truck is accomplished by a tubular draft link interconnecting and attached to both the truck and body by means of a new type of rubber buffer; these buffers allow the required angular movement of the link and also provide cushioning for buff or draft loads. At the articulated truck, these links carry the train draft load and at the full trucks they take only braking and inertia loads.

The truck design described incorporates no working joints carrying body loads nor are there any points where slack or wear can develop. These parts replace swing hangers, spring plank, bolster springs, bolster, bolster wear plates, center plate and side bearings in the usual truck construction. The Delco hydraulic shock absorbers seen on the sides of the towers attach to the body through the long vertical links and serve to damp vertical and banking motions. On the top of each tower is seen one hydraulic shock absorber connected to the lateral restraint arm.

To assist in achieving the objective of light weight, the body structure is also a radical departure from conventional practice, embodying a stressed-skin or semi-monocoque* body structure, with an outer covering of Douglas Fir plywood. A static load test to twice the normal gross load is said to have proved the strength

and rigidity of these car bodies, which are also entirely free of the creaks and groans usually associated with wooden structures. Wood was used in the test cars merely as a convenient expedient in arriving at suitable means to test the trucks and suspension structure within a reasonable time and at a reasonable cost. The car bodies are thus definitely temporary in contrast to the trucks which have been engineered for permanent service. Monocoque construction is adaptable to a variety of materials and a design using the recently developed high-tensile steels is under way for future cars. The trucks of the test train are built to carry such steel bodies.

Preliminary Test Results

Road tests of this new train unit are now in progress and indicate a substantial improvement in passenger comfort. Standing and walking about is said to be accomplished with greater ease and with a feeling of greater stability than in a standard six-wheel-truck club car, weighing six times as much as one of the new cars. Writing at a table is said to be distinctly easier and the result more legible than when done in a standard car. This improvement in riding quality is credited to the absence of the harsh lateral acceleration characteristic of standard equipment at high speeds on indifferent track.

Further test runs including a variety of track conditions are to be made to establish ranges of control, both lateral and vertical, as well as to study the degree of comfort introduced by correct body roll or bank on curves.

* * *



Photo by R. V. Nixon
Canadian Pacific and Canadian National Trains Lined up at Ottawa, Ont.

* The term "monocoque" applies to a type of airplane construction in which the fuselage is built by wrapping wood veneer around forms, in which the veneer is primarily depended on to carry the stresses.

Birmingham Southern moves heavy tonnage in switching and transfer service

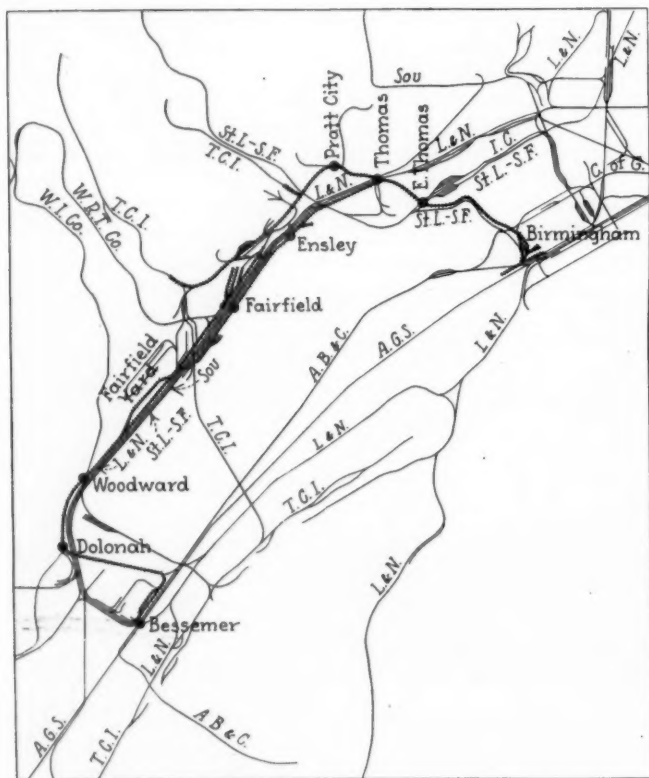
These locomotives consist of five 900-hp. Diesels built by the Electro-Motive Corporation and five of the same horsepower built by the American Locomotive Company. Since there are a number of heavy transfer runs involved in the operations, each of these locomotives is equipped with multiple control, so that any two of the locomotives in either set of five may be operated in tandem, giving 1,800 hp. for the heavy runs. Operating in tandem, these locomotives take up 3,200 tons daily up a 1.5 per cent grade with double reverse curves without stalling or reducing speed below 7 m.p.h. at any time. The multiple control also has the advantage of prompt pick-up with heavy loads, which is an important advantage.

Another important factor is the speed of the locomotives. Material from all of the plants is frequently received as late as 5:30 p. m., and since all of this must be delivered to connections before 10 p. m. to make trunk line fast train connections, high speed switching and transfer movements are necessary. The Diesels have been found to answer this requirement very well.

The Birmingham Southern is an important factor in the transportation picture of the Birmingham district. Not only does it serve the numerous steel plants, but it has some 75 other industries along its lines, originating a wide variety of products such as building materials, coal, oil, fire brick and clay, railway equipment, tar, groceries, barrels, culverts, machines and many other products. Although the B. S. is listed under the classification of "Terminal and Switching Carriers," it serves as a miniature trunk line to a greater degree than most railways under this category. While the maximum haul is short, agencies are maintained at Birmingham, Ensley, Fairfield and Bessemer, and the B. S. participates in through billing. It also serves as a bridge route between the trunk lines entering Birmingham and the Warrior River Terminal Company. This latter railway is entirely owned by the Inland Waterways Corporation and serves Port Birmingham, making connections there with the government barge line as well as the privately operated barge line of the Tennessee Coal, Iron & Railroad Company.

While the Birmingham Southern is a "steel" railroad, it is unique among such lines in that it is not intimately identified with the manufacture of steel. The Tennessee Coal, Iron & Railroad Company maintains a large transportation department which functions generally as a railroad, except that it handles no tonnage other than that belonging to the Tennessee company. It performs all the intra-plant switching and assembles most of the raw materials for the steel plants, except dolomite which is quarried along the B. S. The Birmingham Southern performs no intra-plant work of consequence and handles the inbound and outbound traffic of the steel mills on the same basis as for other industries along its line. The B. S. also connects with all the railroads entering Birmingham and provides an entirely neutral service for these carriers. Its position in this regard is shown on the accompanying map.

In general, the B. S. is not as closely identified with the parent company as is frequently the case with industrially-owned railroads. It has an entirely separate ex-



The Position of the Birmingham Southern With Relation to Other Railways

executive and supervisory organization which functions independently of the steel company's organization.

The B. S. is a thoroughly modern railroad in other respects than its complete Dieselization. Its track is well maintained with 100-lb. rail on the main lines and 80-pound rail on the branches. Within the past few months the railroad has acquired 100 lightweight all-welded box cars, constructed of Cor-Ten steel. The matter of light weight was of relatively secondary importance to the Birmingham Southern itself, as a railroad engaged in switching and short haul service, but it was felt that considerable advantage would accrue from the low maintenance cost of this type of equipment and that the connecting trunk lines would benefit from the lighter weight car on their long hauls. The B. S. also owns 25 65-ft. 6 in. cars for handling long steel products, which are the only cars of this character of southeastern ownership.

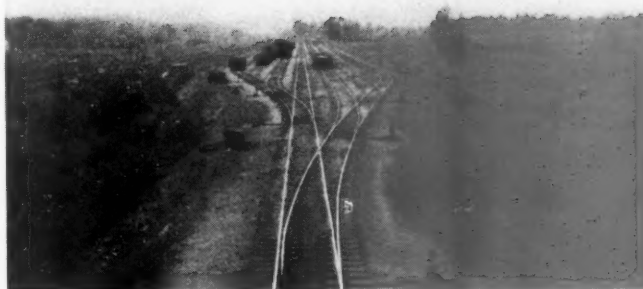
A further innovation includes a two-way radio communication system which is now being installed, under the direction of the Union Switch & Signal Company, between the yard office and each of the Diesel locomotives. The office installation has already been completed, and one of the locomotives is also equipped. The remainder of the locomotives will be equipped and reception provided over the entire railroad within the next few months, at which time a complete description of the installation will appear in the *Railway Age*.

The Birmingham Southern is called upon to handle a heavy tonnage. In March, 1937, for example, the heaviest month this year, 295,666 revenue tons were handled, in addition to 4,691 carloads on which the B. S. received only a switching charge. This tonnage came from a number of sources and had to be handled in a number of different ways, the crew and locomotive line-up being devised to keep a regular day-to-day movement of switching and transfer runs and standardize the operations as far as possible. Special runs, however, are frequently necessary, and this, too, must be allowed for in the operating set-up of the 27 crews employed.

Fourteen crews operate out of Ensley and 13 out of Fairfield, 5 each on the morning and afternoon shifts at both Ensley and Fairfield, with 4 on the third shift at Ensley and 3 at Fairfield. From this it will be observed that the 10 Diesels are given maximum utilization through the 24 hrs., particularly when the necessity for fueling and inspection is considered. The temporary pit and fuel tanks are situated at Fairfield, and the locomotives are traded off from one run to another so that each of the 10 arrives at Fairfield at least once daily for fueling, in the normal course of operations. On the outlying switching jobs, a hostler changes the engines, usually during the 20-min. lunch periods.

The steam locomotives of the Birmingham Southern were formerly maintained at the enginehouse and backshop of the transportation department of the Tennessee Coal, Iron & Railroad Company at Pratt City, Ala., under contract, the B. S. having no shops of its own. With the advent of the Diesels last spring, plans were made for the ultimate provision of complete facilities for taking care of them. However, since the new locomotives would not require heavy repairs for some time, only temporary facilities were put in to begin with. These consist of a temporary 2,500-gal. lubricating oil tank, a pump house and pits at Fairfield, while the maintenance force consists of two mechanics, an electrician, a mechanic-electrician and a helper.

This small force and facilities have met the needs up to the present, but plans are completed and construction has been begun on a shop layout of considerable size that will enable the B. S. to make any repairs necessary to



Views of the Track and Yards of the Birmingham Southern Which Has Now Gone to Exclusively Diesel Operation

its Diesels. This will include a large repair shop, an enlarged powerhouse, two 25,000-gal. fuel oil tanks and two 5,000-gal. lubricating oil tanks. A modern bath house, with lockers and other facilities for 200 men, was completed and placed in service at Fairfield on September 1 as a part of this project. It is believed that this project, when completed, will comprise the first exclusive Diesel locomotive shop in this country.

Senator Wheeler Diagnoses and Prescribes

WASHINGTON, D. C.

DISCARDING entirely a prepared address which had been given out to the newspapers in advance, Chairman Wheeler of the Senate Committee on Interstate Commerce, on February 8 outlined to the Transportation Club of Washington, D. C., some of his ideas on what is wrong with the railroads and what needs to be done about them. He summarized his recommendations for legislation as follows:

1. Keep total capitalization down to earning value in lean years.
2. Keep debt and interest charges low.
3. Abolish the undistributed surplus tax to the end that railroads can set up sinking funds with which to pay bonded indebtedness.
4. Tighten the law regulating railroad expenditures for the purchase of other companies' stock.
5. Require genuine competitive bidding for the sale of equipment and supplies to railroad purchasers.
6. Eliminate unnecessary holding companies and non-operating affiliates and subsidiaries.
7. Give to the Interstate Commerce Commission the same normal and routine access to records of bankers and brokers which it now has to carrier records.
8. Strengthen Interstate Commerce Commission to give it the above powers.

Prefacing his remarks with the observation that his audience presumably consisted of "Mr. Ickes' 60 families" and that they could neither vote for him nor against him, Senator Wheeler disclaimed expert knowledge of the railroad situation, but said his view was "a great deal more optimistic than that of some of the 'crepe-hangers' who have been foretelling a dire future for the railroad industry. The railroads are not, he said, 'relics of the horse and buggy days.' They are more indispensable today than ever. The railroads have bound the United States into the greatest political unit on earth, and railroad service is indispensable to its continuance as such.

He deplored the money which the railroads have "wasted" in the purchase of railroad and other properties at prices "so high that in some instances they amounted to rebates." He voiced his opposition to the lending of government funds to stave off bankruptcy. Following the debacle of 1929, he said that he had opposed the establishment of the Reconstruction Finance Corporation to lend money to railroads and large financial institutions on the grounds that "when you start loaning government money you will not be able to stop." At that time he predicted that if such loans were made "everybody will come to Washington looking for money—and haven't they?"

"We should have let these companies go through the wringer from 1929 to 1933," he insisted. The private and public debt structure of the country is one which "we can not support," and sooner or later this debt structure will have to be liquidated.

An increase in freight rates would in his judgment be

but a temporary palliative. He believes it is wrong to fix the price of farm products and it is equally wrong for monopolies to do the same. If industrial prices are going to be fixed, then prices of products now competitive will have to be fixed too; and public regulation is the inevitable corollary of such monopoly practices. If this tendency continues, "we will have in Washington the greatest bureaucracy the world has ever known," and such a bureaucracy is bound to be run "from the top down."

The railroads were forced to pay monopoly prices for steel and everything else they had to buy during the depression, he said, and unless genuine competition is re-established "we are not going to have a democratic republic in the United States." He pointed out the inconsistency of business support for the N.R.A. idea, stating that when business asks for favors from the government it is also "asking" for government regulation.

He remarked that the railroads and their employees are to be congratulated upon the manner in which they have settled their disputes by collective bargaining and through mediation. He denied that the railroad workers are "on the average" overpaid. He stated the belief that "railroad executives here this evening will agree with me that the railroad workers as a class are among the most intelligent group in this country."

Since, in his view, there is no solution to railway difficulties either in a rate increase or in reduced wages, the solution must be sought elsewhere. "It is argued with much force," he said, "that where two railroads can effectively and efficiently handle all business between two large distributing points it is a burden on interstate commerce to maintain six; that only those should be maintained which are the most direct and therefore should be the most efficient; that the consuming public is taxed with higher freight rates because of this duplication."

He said that savings up to 700 million dollars a year had been estimated as possible through such consolidations. If, however, consolidation should be permitted, he said that it should not be left to bankers or lawyers to consummate; and he mentioned fees totaling 12 million dollars which had been collected by one banking firm as compensation for its activities in behalf of one large railroad in acquiring stock control of other carriers. Bond issues, he stated, should be awarded only after competitive bidding. He was aware of the contention that some railroads have considered themselves in the light of "patients" of certain banking houses—but the bankers have turned out to be "pretty poor doctors."

He accepted 26 billion dollars as the replacement cost of the railroads. He added, however, that if the railroads under modern competitive conditions are not able to earn a return upon 26 billion dollars, then they are not worth that amount. If railroads cannot meet their fixed charges, they should be reorganized and their bonded indebtedness reduced to a point where they can meet them, such indebtedness to be based "not on the hope of future earnings, but upon revenues in times of a Hoover depression or a Democratic recession." He told of a representative of Kuhn Loeb & Co. who, several years ago, had spoken with satisfaction of a number of railroads in the reorganization of which this house had participated but, he added, "four of these seven roads are now back in receivership." Approximately one-third of the roads are now in bankruptcy, another third are avoiding it "by an eyelash" and the remainder are sound; in his opinion.

The Bankruptcy Law must be amended, he contended, so that reorganizations can be expedited; so that when railroads go into bankruptcy they won't just "set there."

(Continued on page 301)

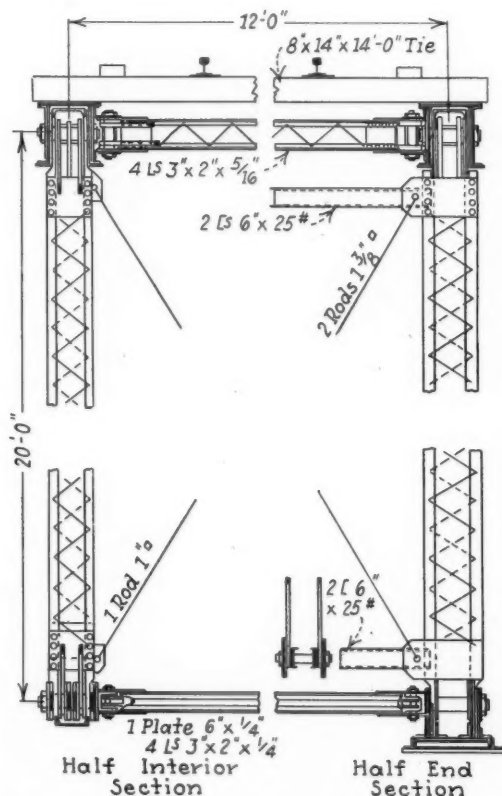
New Trusses Reinforce Old Ones in Santa Fe Bridge

New units were erected on the bank and set in place on the piers by cranes, after which all four were shifted laterally to a closer spacing under the deck

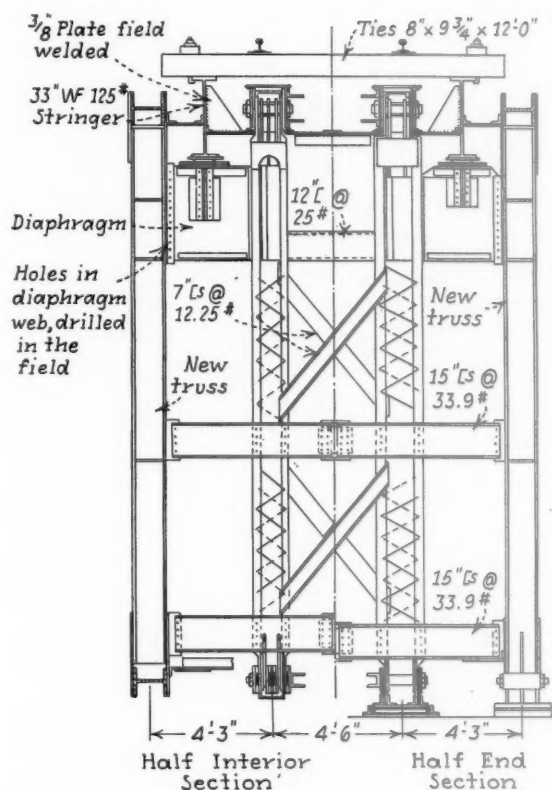
THE erection of a new truss outside each old truss was the expedient adopted by the Atchison, Topeka & Santa Fe to strengthen a three-span, single-track, deck-truss bridge across the Brazos river near Granbury, Tex. The project is of interest, also, because all of the members of the new trusses are 14-in. wide-flange beams, because these trusses were assembled on the bridge approach and set in place by cranes, and because of the manner in which the track load was distributed between the new and old trusses. The addition of the new trusses strengthened the spans sufficiently to provide a load-carrying capacity which was equal to that of other bridges in the same territory. Both riveting and welding were employed in the field connections.

Description of Old Spans

This bridge is on the line from Fort Worth, Tex., to Menard, which until its acquisition by the Santa Fe on December 31, 1936, was the Fort Worth & Rio Grande, a subsidiary of the St. Louis-San Francisco. The old structure, built in 1887, consisted of pin-connected spans



Typical Sections of the Spans Before Strengthening



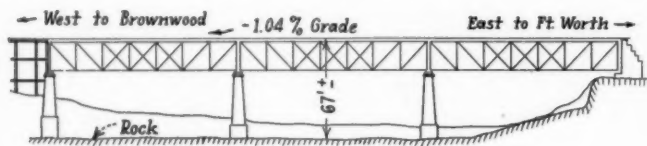
Typical Sections Showing How the New and Old Trusses Were Connected

125 ft. long with trusses 20 ft. deep, center to center of pins. These trusses, spaced 12 ft. center to center, received the track load through 8-in. by 14-in. ties that rested directly on the top chords. Limited capacity of these spans, accentuated by the combined flexure and direct stress in the top chords, and lack of stiffness in the laterals and sway bracing, which were all pin-connected to the trusses, imposed severe restrictions on the classes of power that could be operated over this line. However, because the substructure, consisting of three stone masonry piers and an abutment, all on rock foundation, were in excellent condition, studies were made to develop a plan for increasing the capacity of the bridge, with a view to avoiding the complete replacement of the spans.

Although the span lengths in this bridge are relatively short for trusses, it was found uneconomical to substitute plate girders. Their use would have required the piers and abutment to be raised about nine feet, which would have entailed interruption of traffic. Also, the longitudinal forces would have been applied to the piers nine feet higher and it was felt that these high

masonry piers should not be subjected to any increase in bending moment.

The plan adopted embraced the moving in of the old trusses to a spacing of 4 ft. 6 in. center to center, the erection of a new truss on the outside of each old truss



Sketch Elevation of the Bridge

at a spacing of 4 ft. 3 in., and the introduction of diaphragms between the upper ends of the new and old truss verticals to serve as supports for new steel stringers to carry the deck. However, as will be explained later, the work was not done in that order of sequence.

The New Trusses

As stated above, the new trusses are made up entirely of 14-in. wide-flange beams with simple gusset-plate connections. The heaviest members—the center segments of the top chords—are 95-lb. sections, and the lightest members—the intermediate diagonals and the center panel posts—are 53-lb. sections. The end bearings are of unusually simple design. The end reaction is transmitted to a 2½-in. diameter pin, through a 3½-in. slab that was welded to the lower end of the end post. The expansion bearings are of the rocker type.

The diaphragms that transmit the stringer reactions to each pair of new and old trusses are of plate and angle construction, 3 ft. 4½ in. deep, with bearing stiffeners on each side directly under the stringer seats. These diaphragms have riveted connections against the faces of the truss verticals. The stringers are 33-in. 125-lb. wide-flange beams, with bearing stiffeners at

each end consisting of plates welded against the webs. They are supported on 2½-in. by 2-in. by 9-in. lugs that are welded to the tops of the diaphragms and fit into keeper plates welded to the under side of the beams.

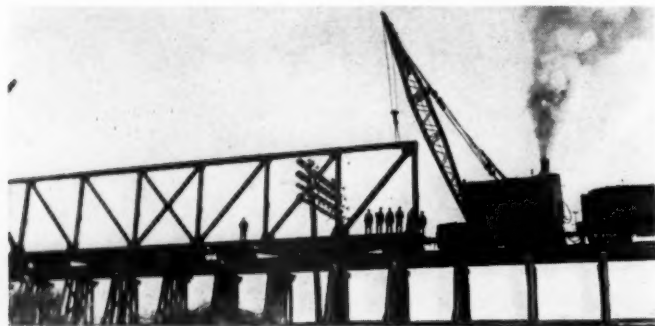
The remodeled spans have bottom laterals of ordinary design, with connections to the new trusses only. However, as lateral bracing of this type could not be used in the plane of the top chords, the necessary lateral stiffness was insured by introducing a system of tie plates or horizontal diaphragms extending transversely across the structure in the plane of the top chords. These ties, consisting of plates and angles, were placed between the new outside trusses and the stringers, between the stringers and the old inside trusses, and between the two old trusses. Three lines of these tie plates were provided in each panel. Bracket plates, welded to the webs of the stringers on their inside faces and to the horizontal tie plates, serve as sway braces for the stringers.

Cross sway bracing was introduced only between the two old trusses, but transverse struts connect all four trusses at several levels. For reasons that are explained by the construction procedure, these struts were made in half lengths and were spliced at the longitudinal axis of the bridge.

The only change in the substructure that was required by the change in the superstructure was to fill in with concrete the space between the two bearing stones on which the shoes of the old trusses rested, to provide bearings at the same elevation at the new locations of these trusses.

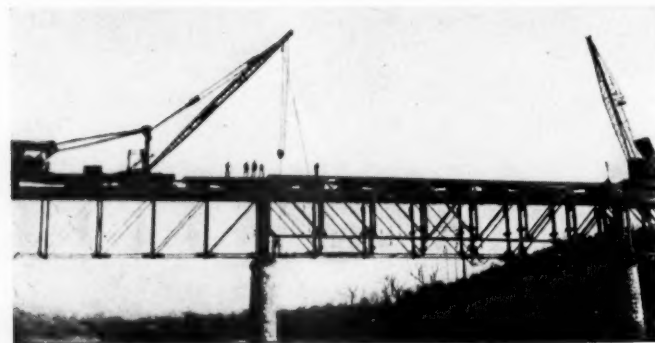
Sequence of Operations

The new trusses, as noted previously, were assembled and riveted beyond the end of the bridge. While this was being done, the diaphragms, struts and other bracing members were riveted to the old trusses. In addition, the shoes for the new trusses were set on blocking outside the bearing stones that supported the old trusses,



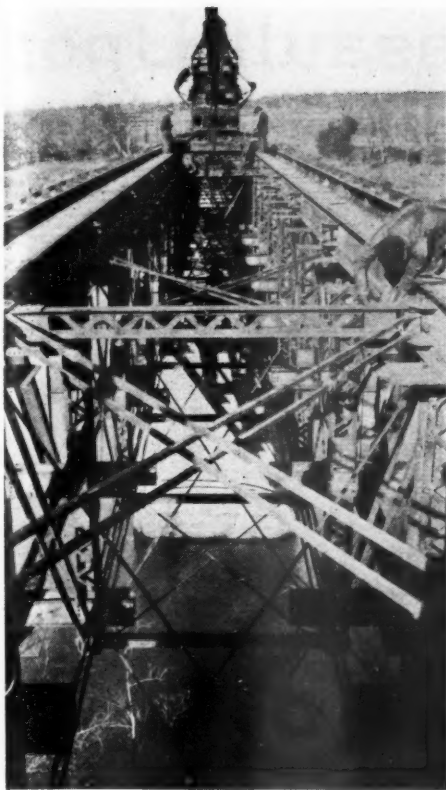
Above—Moving One of the New Trusses Out on the Bridge

Below—Setting a New Truss on the Piers



Connecting Members Were Attached to the Old Trusses Before the New Trusses Were Set in Place—Note Net to Safe-guard Workmen





Deck Removed, Preparatory to Moving the Trusses

so that the center lines of the new shoes were 4 ft. 3 in. from the center lines of the old trusses.

After all these preliminary steps had been completed for one span, the new trusses were picked up in turn by locomotive cranes and set in place on their shoes. The holes in the diaphragm plates, previously attached to the old trusses, were then drilled, using the holes in the angles bolted to the new trusses as templates. The diaphragm connections were then bolted and riveted. Following this, the stringers were set and secured in place by completing a part of the welded connections.

This part of the work being completed, the deck was removed, and the laterals and sway bracing between the two old trusses were flame cut and removed, after which each longitudinal half of the span, that is, each old truss with the connected new truss, was picked up by the cranes and shifted toward the center line of the bridge a distance of 3 ft. 9 in. With the four trusses thus placed in final position, the deck was replaced, using 8-in. by 9 $\frac{3}{4}$ -in. ties in place of the 8-in. by 14-in. ties.



Showing How New and Old Trusses Were Connected

The struts, sway bracing and tie plates were connected up and the elevation of the bearings shoes was adjusted where necessary by introducing prepared iron filings under them. The bottom laterals were then erected and the riveting and welding of all connections was completed.

The tops and sides of the top flanges of the stringers were not painted but were covered with a coating of petrolatum $\frac{1}{32}$ -in. thick.

This plan for the strengthening of this bridge was developed and carried out under the direction of R. A. Van Ness, bridge engineer, system, Atchison, Topeka & Santa Fe, the project being under the general supervision of G. W. Harris, chief engineer, system, and K. B. Duncan, chief engineer, Gulf Lines.

Senator Wheeler Diagnoses and Prescribes

(Continued from page 298)

but get out of it. The tax on undistributed surpluses should be abolished to enable the roads to wipe out their indebtedness. Laws should be passed, in his opinion, to prohibit the recurrence of abuses which have contributed to the present situation. Railroad holding companies, such as the Alleghany Corporation, should be abolished entirely. They cannot be effectively regulated. The railroads ought not to be affiliated with a "coal company in New Hampshire or a peach orchard in Arkansas." Instead, they ought to stick to the business of handling freight and passengers. The Senator stated to his hearers who were railroad executives that "whether you are a president of a Western road or a Southern road, you will have to stick close to New York so the bankers can tell you how to run your railroads."

"How," he asked, "can we expect the men engaged in railroad operation to do their utmost in effecting economies when they are obliged to acknowledge to themselves that what they can save is only a drop in the bucket compared with the losses from which only the bankers or super-holding companies can free the railroads? Why should the chief officers of railroads that do not come within a dozen miles of New York have to travel to that city to get orders from directors who rarely get west of the Hudson river?"

The problem of the railroads, in his opinion, is essentially identical with the problem of industry in general—and that problem has its moral as well as its economic aspect. From the economic standpoint, what both the railroads and the rest of the country need is a larger volume of business. From a moral standpoint, what is needed is greater self-reliance and less dependence on monopoly practices and government assistance in maintaining high prices.

Conditions threatening America, he said, are the same which have brought the downfall of other societies in history, namely, "the graft and greed and selfishness of the ruling classes." There must be a "moral awakening" among the leaders of industry and finance (and this can not be "laughed off" either). There is "nothing smart" in beating the law set up to maintain honest business practices. There is "nothing smart" in a couple of big banking houses arbitrarily dividing all the railroad financial business in the country between them. The Interstate Commerce Committees of both houses of Congress, he said, are trying to do a conscientious job and, if honest and conscientious co-operation is extended to them, then there is no necessity why the future of the railroads should be particularly dark.

Railroads Continue Assault Upon Train Limit Bill

WASHINGTON, D. C.

THE case for the railroads in opposition to S. 69, the train-limit bill, advanced to the "safety" stage during the past week when hearings were continued before the House committee on interstate and foreign commerce. At this week's hearings two Southern Pacific men concluded their statements and answered all the numerous questions that were propounded by members of the committee. They were Henley C. Booth, general attorney of the road, and J. J. Sullivan, of Ogden, Utah, assistant superintendent of the road, Mr. Booth appearing as a legal witness and Mr. Sullivan as a safety expert.

Henley C. Booth, general attorney for the Southern Pacific, concluded his statement at the February 3 session. Representative Eicher of Iowa wanted to know whether the court "findings of fact" in the Arizona case made any mention of whether there was any mechanical objection to a train of any length. Mr. Booth replied that there was never any proof of this objection on trains of 70 cars. Representative Mapes of Michigan asked Mr. Booth whether or not he felt that there should be any limit to the length of trains. Mr. Booth was of the opinion that this question could very well be left to managerial discretion. He further felt that no rigid rule should apply under all conditions.

Representative Bulwinkle of North Carolina challenged Mr. Booth to name the railroads, if any, that have exercised their "managerial discretion" in the limitation of the length of trains. Mr. Booth was not familiar with all roads, but he said that he had heard it stated at the present hearings and he believed it to be true that the Pennsylvania has a 125-car limit. He further stated that this was the only one that he had heard of and this information did not come from any Pennsylvania man.

The next witness for the Association of American Railroads was J. J. Sullivan of Ogden, Utah, assistant superintendent of the Southern Pacific, who appeared as an expert safety witness at the February 4 hearing. Mr. Sullivan, who had testified in the Arizona and Nevada cases as to the results of safety studies he had made, began his presentation by asserting that the number of grade crossing accidents will increase in direct ratio to the number of trains run. He then introduced charts which showed that as the length of trains has gone up the number of casualty cases from railroad accidents has gone down. In response to questions of several congressmen regarding his qualifications as an expert witness, Mr. Sullivan said that he had ridden at least 200,000 miles in a caboose. He added that he had never seen a man injured in a caboose and had never been injured himself.

Representative Boren wanted to know whether or not shippers ever objected to having their livestock placed near the rear end of the train for fear that the shock from slack action would injure them. The witness said that he had never heard of such criticism. Representative Bulwinkle asked the witness what, in his opinion, could or should be done to reduce the casualties from slack action. Mr. Sullivan answered this query by saying that the railroad officers recognize the need for the elimination of this type of accidents. He went on to point out that they are working toward this end by im-

proving the equipment and stressing the need for safety first among the employees. The witness also believes that over half of the casualties from slack action resulted from employees doing things in the caboose that they should not do. Other things that the railroads are doing include the total elimination of arch-bar trucks, installation of double plate wheels, brake rigging and brake beam safety supports.

Mr. Sullivan told the committee that the effect of the proposed bill on those who travel by highway was of equal importance with the safety of the trainmen. "Even if this bill," said Mr. Sullivan, "prevented all the accidents that proponents claim it would, the number prevented would be small compared with the many additional deaths and injuries that would occur at highway-railroad grade crossings, because of the increase in the number of trains which would have to be operated in order to handle the freight traffic of the country. Had this bill been a law in 1936 the volume of freight traffic in that year would have required the operation of 60 million additional train miles in the United States, from which it may be conservatively estimated would have caused between 390 and 450 additional casualties to occupants of automobiles at highway-rail grade crossings."

Mr. Sullivan continued with his statement at the February 8 session of the committee. During his presentation, Chairman Lea asked Mr. Sullivan what was the average speed of freight trains. According to the witness, the speed varies in different sections of the country, but he felt that the average was between 40 and 55 miles an hour. Then Chairman Lea wanted to know how far a train of 70 cars travelling at 50 miles per hour will go after an emergency application of the air. The witness believed it would travel about a quarter mile.

Citing the objections of the proponents of the bill that long freight trains were not thoroughly inspected at terminals, Mr. Sullivan asserted that every car in a train is thoroughly inspected by trained employees before the train is turned over to the train crew. He also observed that trains did not need to be inspected nearly as often as the proponents said they should because of the fact that modern equipment stands up much better under use.

Coming to the contention of the brotherhoods that the length of freight trains makes it impossible to signal the head end of the train the witness held that the hand signal for stopping was the only one related to the question of safety. He discounted the testimony of the proponents' witnesses on this subject and said that the statistics of the Interstate Commerce Commission's Bureau of Safety did not bear them out in this particular.

On the question of grade crossing accidents, Representative Pearson of Tennessee asked whether the total car miles run would increase under the bill. Mr. Sullivan replied that it would not. Mr. Sullivan was emphatic in warning the committee that any increase in the number of freight trains will increase the hazards of passenger trains. He added that it was axiomatic that the fewer trains operated, the fewer would be the number of grade crossing accidents.

Mr. Sullivan concluded the reading of his statement at the February 9 meeting of the committee, devoting much of his time to criticizing the testimony of the pro-

ponents' witnesses. At the beginning of the session, Representative Withrow asked Mr. Sullivan whether or not the railroads take into consideration the possible increase in the number of grade crossing accidents when they increase the number of passenger trains. The witness replied that the carriers naturally realize that there will be an increased danger in adding more trains, and that they only do so when they feel that they have to to carry an increased number of passengers. Representative Withrow then wanted to know how many passenger trains are run in proportion to the amount of freight trains, so that he might see whether freight trains caused more accidents at grade crossings than passenger trains. The only figures that Mr. Sullivan could give him were to the effect that in 1936 there were 3.8 casualties for every 1,000,000 freight train miles, as compared with 3.9 casualties for every 1,000,000 passenger train miles. Representative Withrow went on to say that he thought the number of passenger trains as compared with the number of freight trains is important since he feels that a higher percentage of grade crossing accidents are caused by passenger trains. Therefore, according to him, it cannot be concluded that an increase in the number of freight trains will automatically increase the number of grade crossing accidents. Mr. Sullivan answered this hypothesis by stating that it was his opinion that the type of train made little difference. At this point he informed the committee that 60 per cent of all grade crossing accidents result in fatalities.

Taking up a comparison of the statistics for accidents in Nevada, where no 70 car limit law has been operating, and in Arizona, where such a law has been in force since 1912, Mr. Sullivan asserted that "if the 70 car law is effective in Arizona, we should find a reduction in the number of casualties from grade crossing accidents." He then went on to say that exactly the opposite situation obtains in that state. Such a situation also is found when one looks at the figures showing the number of injuries to conductors, brakemen and firemen.

Chairman Lea inquired as to what could be done to reduce the danger to men riding in the caboose. Mr. Sullivan said that he understood that the Association of American Railroads is working on a type of caboose which will eliminate many of the hazards that now exist. Representative Eicher asked the witness what he knew about new types of air brakes which would eliminate or reduce violent shocks. According to Mr. Sullivan, a new type of brake is being installed on all new cars that are being built.

Mr. Sullivan concluded his statement by charging that J. A. Farquharson, national legislative representative of the Brotherhood of Railroad Trainmen, had omitted important information in his list of some 1400 cases of railroad accidents which he had presented to the committee during his testimony. Much of the information in the list is not found in the Interstate Commerce Commission reports, according to Mr. Sullivan. He further accused Mr. Farquharson of using only the cases which met his requirements and helped his cause.

Fairfax Harrison Dies at 69

Sense of trusteeship to owners, and responsibility to employees and community, marked career of man who left deep impress of individuality on company he headed

FAIRFAX HARRISON, who died in Baltimore on Wednesday of last week, as announced briefly in the *Railway Age* of February 5, was a "self made" man, who nevertheless performed the duties of his job as if it were a responsibility which had come to him as the upholder of the traditions of an old and honored name. He looked upon his obligation to the stockholders of the Southern Railway in the light of a solemn trusteeship. To the employees of the system he also demonstrated the same sense of responsibility, impressing upon those who surrounded him that, even as the working-man who did his job well was entitled to good wages, so also was the man who advanced the capital to make jobs possible entitled to just compensation for the investment of his money.

Mr. Harrison was born in New York on March 13, 1869, of an old Virginia family, which traced its ancestry back to the Culpepers (Lord Fairfax). He was educated at Yale and Columbia Universities and began the practice of law in New York. In 1896 he joined the Southern Railway as solicitor in Washington, and from 1903 to 1906 also served as assistant to President Spencer. In 1906 he was named vice-president in charge of the financial and accounting departments; and from 1910 to 1913 he was president of the Monon (a company in

which the Southern and L. & N. were jointly interested).

On December 1, 1913, he was elected to the presidency of the Southern and remained in that capacity until October 21 last year, when he retired, continuing to hold, however, the chairmanship of the finance committee and a membership on the directorate.

Characteristic of Mr. Harrison's leadership on the Southern Railway was his feeling for the individuality of the property, and the measures he took to instill a regard for this view in the staff. The assignment of motive power to specific engine crews, and the provision that "old heads" among locomotive engineers were entitled to have their names stenciled upon the cabs of their engines was one step which he took toward cultivation of this spirit. Another was the painting of passenger locomotives of a distinctive shade of green.

Throughout his career in the presidency he was constantly on the alert for the appearance of men of ability in subordinate capacities, to whom, when he found them, he gave the opportunity to prove their ability in higher position. The selection and training of men to fill vacancies in the official family, which in the course of nature were bound to occur periodically, he regarded as one of his major responsibilities.

(Continued on page 308)

Ex Parte 123 Case Submitted

Nine-day program of oral arguments concluded
on February 9, which was also the deadline
for filing briefs

WASHINGTON, D. C.

THE Ex Parte 123 rate-increase case stood submitted to the Interstate Commerce Commission on February 9, the day on which oral arguments were completed and also the deadline for the filing of briefs. The railroads' rebuttal argument by Judge R. V. Fletcher, vice-president and general counsel of the Association of American Railroads, and the brief answer of Luther M. Walter, co-trustee of the Chicago Great Western, to Judge Fletcher's comment on his revenue pooling proposal wound up the nine-day program at which more than 100 separate presentations by counsel for various interests were heard.

Judge Fletcher, who made a 1¾-hr. argument, presented the railroad case as a revenue proceeding, and contended that in such a case the burden of proof is met by a showing of the imperative need for revenue. The latter, he insisted, had been shown by evidence indicating that if 1938 traffic is about the same as that of 1936 (as it is now estimated will be the situation) the carriers, without any increase in rates, would earn this year a net railway operating income of about \$365,000,000 and report a deficit after charges of about \$137,000,000. Such results, he added, would make 1938 the worst year in recent railroad history—worse than 1932—if not the worst in all history. The situation "would be desperate indeed."

Railroads Preparing Plan on Coal Revenues

In the course of his discussion of proposed increases on coal rates Judge Fletcher said that the railroads may be expected to submit to the commission some plan for the distribution of revenues collected by Pocahontas lines in accordance with the stipulations of the Ex Parte 115 decision, which plan would also apply to any increases granted in Ex Parte 123. In its Ex Parte 115 decision the commission expressed the view that, because so large a part of the revenue from increased rates on bituminous would go to the Chesapeake & Ohio, the Norfolk & Western and the Virginian, which were not in need of additional revenue, a permanent increase in the bituminous rates should not be approved without consideration of a possible pooling arrangement. Accordingly, the bituminous increases were approved only for a period to terminate December 31, 1938.

Lumber, Iron Ore, Fruits and Vegetables

R. C. Fulbright's opening protest on behalf of the lumber industry, reported in last week's issue, was followed by the arguments of W. C. McCulloch and J. V. Norman, representing respectively the West Coast Lumbermen's Association and the Southern Hardwood Traffic Association and other lumber interests. Among the points made in these arguments was a contention that the carriers should make some contribution in the current drive to restore prosperous business conditions; that the railroad petition defies the laws of economics; and that the lumber industry got no co-operation from

the carriers when it was at a low level. The railroads, Mr. Norman said, have come forward with their "usual contribution"—a proposal to increase rates at a time when labor and industry generally are being asked to co-operate to halt the recession.

Next counsel for iron ore producers and steel manufacturers protested against any increase in iron ore rates. Among these was W. W. Collin, Jr., representing the Jones & Laughlin Steel Corporation, who pointed out how the steel industry has always been fair to the railroads in rate matters, and how that industry is now at a very low level itself; and T. H. Burgess, counsel for the Republic Steel Corporation, who asserted that the steel industry is now carrying more than its share of the transportation burden and that iron ore loading figures prove this.

Nine counsel representing various fresh fruit and vegetable interests made such points as the possibility of the industry's resorting to sales to canners with big losses of traffic to railroads; the drop in consumption which higher prices would bring; the inability of growers to pass along any increases in their costs; and the tendency of rate increases to take revenue from farmers and give it to the carriers whose condition of depression is only temporary. Neither does the canning industry favor an increase, for it would hurt both the farmers and the railroads.

As it was put by one of the counsel for fruit and vegetable interests—J. R. Van Arnum, representing the National League of Fresh Fruit and Vegetable Distributors—an increase in freight rates would simply reduce the buying power of the farmer. He saw no possibility of increasing prices on fresh fruits and vegetables at a time when revenues and capital are declining and people have less money to spend.

Eastern Passenger Fares

At this point John A. Hastings of New York came forward with an argument on behalf of his plan for "postalizing" passenger fares. He told the commission that it had greater power than the United States Supreme Court, and that it held the economic life of the country in its hands. "You social scientists," he added, "ought to follow the example of the physical scientists in annihilating distance." His proposal, Mr. Hastings continued, has been tried out with success over a 100-year period in the postal service where the first-class mail is handled at a profit. Mr. Hastings would have his "postalized" fares zoned for suburban, interurban and long distance travel. He would charge 15 cents for any ride in a suburban zone, 50 cents for an inter-urban trip and varying prices for a long-distance ride. Taking New York-Chicago as an example of the latter, Mr. Hastings illustrated his plan by reference to New York Central trains. The Mohawk he would call a local service and would charge \$1 for a New York-Chicago trip on it; the Commodore Vanderbilt would provide

express service at \$3 and the Twentieth Century Limited a \$5 limited service.

Later J. G. Daly, representing the United Commercial Travelers, appeared to argue against the proposal to increase Eastern coach fares from two cents to two and one-half cents a mile. Mr. Daly's presentation in this connection was along the lines of his testimony at the January 20 hearing, reported in the *Railway Age* of January 29. He pointed out how the cut in fares from 3.6 cents to two cents had sent many salesmen back to the rails and predicted that the proposed boost would drive them away again. In Mr. Daly's view the commission had an opportunity to render a public service by refusing the increase. The carriers, he said, should be made to serve people who cannot afford to pay higher fares as well as that class which the railroads contend could absorb the proposed increase. The only case which the railroads have in connection with the Eastern fare proposal, Mr. Daly said, is that if they are permitted to do so they can get more money out of travelers.

Coal Interests Protest

Protests on behalf of coal interests were led off by the argument of E. C. Calhoun, who represented the National Bituminous Coal Commission, and who was followed by some 10 counsel for various other protestants. When Mr. Calhoun asserted that the leading bituminous carriers did not need additional revenues, Commissioner Eastman asked if the Coal Commission refrained from fixing coal prices because some individual companies were already prosperous. Mr. Calhoun was not prepared to state that there was no company compelled to charge the minimum prices which was not in financial difficulties. He later told Commissioner Rogers that he thought the I. C. C. served notice in its Ex Parte 115 decision that no further increases would be granted on bituminous coal unless the Pocahontas lines were willing to pool the resulting revenues for the benefit of more ready roads.

Donald Gallagher, speaking for the Consumers Counsel, predicted that if increases in bituminous coal rates are granted there will be a decided shift to substitute fuels, such as oil and gas, and the result will be disastrous to both the soft coal industry and the railroads. J. V. Norman argued for the Property Owners' Committee of West Virginia coal producers, meanwhile filing a brief supporting his view that the commission was without power to compel a pooling of earnings from bituminous coal rates. J. J. Hickey, representing anthracite coal operators, declared that the anthracite industry could not get higher prices for its product, and thus an increase in freight rates will only make that industry's annual deficit \$10,000,000 more, or over \$30,000,000. He added that anthracite producers also have every item of expense which the carriers listed in support of their petition.

John B. Keeler, counsel for the Koppers Company, asked equality of treatment for coke and its competitor—anthracite coal. He pointed out how in Ex Parte 115 the coke rates were increased but those on anthracite were not. H. A. Hollopeter stated that Central territory coke producers whom he represented opposed any further increases on bituminous coal and coke, and suggested further that the Ex Parte 115 increases be allowed to expire at the end of this year as now stipulated. Speaking also for the Indiana State Chamber of Commerce Mr. Hollopeter thought the commission should consider the differing needs of carriers in different territories. He told Commissioner Rogers that he saw no practical difficulties in that connection, since the carriers

have been treated in territorial groups for years. Also, Mr. Hollopeter feels that if any increase is allowed it should be a temporary one.

Suggests Economies and Tax Cuts

Raymond E. Sullivan, assistant attorney general of Massachusetts, made a 25-minute argument on behalf of his proposal that the railroads look to economies and tax reductions for a solution of their difficulties. Asked by Commissioner Caskie if Massachusetts were prepared to cut railroad taxes, Mr. Sullivan replied that carriers there were now attempting to abandon certain facilities which they hoped to have removed from the tax base. Mr. Sullivan replied with an "I should say not" to Commissioner Mahaffie's inquiry as to whether Massachusetts was ready to express an opinion as to the economy possibilities of railroad consolidation. Another feature of Mr. Sullivan's proposal is a study of the rail situation by practical men excluding "professors and theorists".

J. F. Lawrence appeared for mid-continent oil refiners and H. S. Elkins for Western Pennsylvania refiners. Mr. Lawrence's attack on the Standard Oil Company drew a later reply from the latter's counsel—E. D. Shaffee. Meanwhile H. J. Conley had argued for Southwestern quarries and several protests with respect to increased cotton rates had been heard. Last week's sessions, extending through Saturday forenoon, were closed with presentations of Thomas L. Phillips, representing the Clay Products Association.

This week's program was opened by John T. Money who argued a half hour on behalf of the National Fertilizer Association and 20 minutes for the Structural Clay Products Institute. Seven other counsel also appeared on behalf of shippers of construction materials, arguing that their respective commodities are already paying high rates; that producers will be forced out of business or driven to truck transportation; and that the building industry cannot absorb any increases beyond those allowed in Ex Parte 115.

Paper and Pulp

Arguments on behalf of paper and pulp shippers were opened by Wilbur LaRoe, Jr., whose 45-minute talk was followed by the 10- and 15-minute presentations of four other counsel. Mr. LaRoe stated that his clients had attempted unsuccessfully to devise a workable pooling plan. He thought that the commission may have the power to authorize increases, conditioned upon a voluntary pooling plan, "but even this might involve serious difficulties." He went on to express the view that the solution of the railroad problem does not lie along the line of increased rates, adding that "friendly shippers are wondering why the railroads have not done more to help themselves in the way of effectuating economies." Mr. LaRoe doubted that anyone knowing the facts would question the truth of Senator Wheeler's recent Chicago statement to the effect that increased freight rates at this time might be a shot in the arm, but in the long run it would hurt the carriers and industry generally.

Coming to the attitude of the paper industry, Mr. LaRoe revealed that generally speaking that industry appreciates the value of railroad service to it and to the country. It believes, however, that no increase should be superimposed on the Ex Parte 115 adjustment. Mr. LaRoe also objected to straight percentage increases, stating that there was no painless way to raise rates but that percentage increases without limit was one of the ways to make a boost unnecessarily painful.

The 4½-hour presentation under the "livestock and

products" heading was opened by R. D. Rynder, counsel for Swift & Co., who asserted that increased rates on meats would force packers to cut their payments to producers. Such increases, he added, would, when the December 20 boost is considered, produce increases ranging from 20 to 30 per cent. It was Mr. Rynder's view that the problem of the carriers is to obtain more tonnage, rather than lose additional revenue through rates which will drive traffic away. Charles E. Blaine expressed the opposition of the American National Livestock Association and other organizations to any increase on livestock and its products, including wool; while W. H. Wagner argued for Iowa packers.

P. E. Blanchard, counsel for Armour & Company, asserted that when the railroads as a group petition for increased rates they must come before the commission with a showing that they have done everything in their power to function with economy as a national transportation system. The carriers, he said, cannot eat their cake by shifting the burden of proof under a section 15 (a) application and at the same time retain the rugged individualism of managerial discretion. Mr. Blanchard also called attention to the 400 trucks which Armour has purchased for line-haul service in recent years, adding that the railroad problem in that connection is to see that it is unprofitable for Armour either to buy any more trucks or to replace those it now has when they are worn out.

Arguments of counsel for various other livestock interests were followed by some 15 presentations of from 10 to 30 minutes on behalf of various miscellaneous interests. These included newsprint manufacturers and consumers, the East Central Wooden Box Association, the Jacksonville, Fla., Chamber of Commerce, the Tanners' Council of U. S., the Alkali Consumers Traffic Committee, the Evaporated Milk Association, brewing and barrel and glass container shippers, the Peoples' Lobby, the Myles Salt Company, and Heywood-Wakefield Company.

On "Pressure" from White House and "Propaganda"

Among the foregoing was J. F. Finerty, representing the Glass Container Association, whose complaint in connection with the commission's failure to suspend the Ex Parte 115 increases which became effective December 20, 1937, included a suggestion that the regulatory body was at the time under "terrific pressure—Executive, newspaper, every other sort of pressure of the carriers exists here." This remark precipitated a discussion between counsel and the bench, with Commissioner Eastman first asking about the reference to executive pressure. Mr. Finerty replied that he thought that at the time Judge Fletcher was arguing against the suspension "the President was announcing from the White House that it was necessary to afford additional revenue to the railroads."

Commissioner Lee remarked that so far as he knew "this commission has never been under any pressure from either the President or the newspapers to decide a case here on anything but its merits." Mr. Finerty replied that the commission "is only human" and thus it "must be affected" by public recognition of the railroads' needs. While not saying that it did so, he thought the regulatory body was not to be blamed if it had given some consideration to such pronouncements. Mr. Finerty is not sure that if he were a commissioner he would be "unaffected by announcements from the White House and by the propaganda that is going on as to the railroads' needs."

Commissioner Eastman said that when he acted in the suspension case he did not know that any such statement had been issued from the White House; and Commissioner Meyer asserted that the commission's action was taken before the President spoke. Mr. Finerty did not think so, but later Mr. Meyer said he had reviewed the matter in his mind, and he wished "to say in the most positive manner that the commission took its official action before anything emanated from the White House." It developed that Commissioner Meyer had in mind the motion of the carriers to make the 15 per cent increase effective immediately, but he nevertheless said, in connection with the refusal to suspend the December 20 increases that Mr. Finerty could not know at what hour the decision was made.

By this time the question, in Mr. Finerty's view, had become one "of personal privilege" which he desired to clear up. He did not intend "to impugn the commission's action in any way." He conceded that the White House announcement may have had no effect, but he "would not expect" the commission "to be unaffected by it." Whereupon Commissioner Aitchison observed that the propaganda has not been wholly on one side. And Mr. Finerty agreed, adding that "unfortunately it has been better organized on one side than the other."

Railroad Rebuttal by Judge Fletcher

Judge Fletcher opened his rebuttal argument with an explanation of why the railroads chose 1933 as a basis for their comparisons. In addition to the reasons given by carrier witnesses, he said, there was the further fact that in 1933 an attack was made on the rate structure by shippers of basic commodities; and the commission found that the complainants had not shown the 1933 rates to be unreasonable. Thus, Judge Fletcher continued, if it be assumed that the 1933 rates were reasonable, it is possible to start from that point and show subsequent increases in costs. He cited testimony to the effect that the latter amounts to about \$667,000,000.

Next came his above-mentioned discussion of the dismal outlook for 1938 if increased revenues are not obtained and his answer to Mr. La Roe's contention that an increase of about 8.5 per cent would give the carriers earnings equal to those of 1936. Judge Fletcher thought it sufficient to say in the latter connection that such conditions would bring only a 2.5 per cent return, which is insufficient to insure an adequate transportation system. Asked by Commissioner Eastman if the railroads would expect to earn more in a period of recession, Judge Fletcher replied that if the low level of business is to be permanent "we may have to recast our lines." But he is confident improved business conditions will return.

Revenue Expected from Increases

With reference to revenues which may be expected to result from the increased rates, Judge Fletcher gave figures based on the assumption that 1938 traffic would about equal that of 1936. In such a situation the increases would bring in about \$467,000,000, including about \$30,000,000 from the Eastern fare boost. Income taxes would cut this to about \$418,000,000, which Judge Fletcher explained "is the amount really involved." The result would be a 4 per cent return on a valuation of \$20,000,000,000. In addition to the \$49,000,000 which would go into the above-mentioned income taxes, \$302,500,000 of the increased revenues would go to pay increased wages, increased material prices and taxes other than income taxes. Thus the railroads would carry about \$115,000,000 to net railway operating income.

When Judge Fletcher made his point that the burden of proof in a revenue case is met by a showing of carrier needs, Commissioner Caskie suggested that if that were true the commission had been foolish to hold hearings throughout the country to hear shipper protests. Judge Fletcher replied that he would not be critical of that procedure, since the shippers had a right to say what they could in answer to the carrier presentation. There followed a legal discussion of the right of a carrier to a fair return and the public's right to have rates tested on the basis of the value of the service. After which Judge Fletcher turned to the question of whether the proposed increases will in fact augment carrier revenues.

In the latter connection he thought that the opposition arguments reflected a widespread altruism on the part of protestants who were willing to spend their money to make presentations designed to save the railroads from themselves. He told Commissioner Eastman that such presentations have not caused the carriers to revise their original views on the matter. The railroad traffic officers, he explained, have no motive for misrepresentation; and he cited the experience with the surcharges to bolster his argument. If railroad management has made a mistake, Judge Fletcher added, "the blood is upon their heads"; and they cannot blame the commission.

Other Transport Agencies in Sad Plight

Continuing, Judge Fletcher cited evidence as to the plight of competing forms of transportation who plan to increase their rates to maintain the present relationship with rail charges. He had not supposed that any agency of transportation could be worse off than the railroads, but the highway and water carriers seem to him "to be in a very distressing situation." Also, Judge Fletcher cited the testimony of shippers favoring the increase. These he called substantial shippers, whose aggregate freight payments are large. He called attention to a footnote in the railroad brief which lists such shippers and the amount of their freight charges. Later when Judge Fletcher said the protests had made him wonder if there were any prosperous people in the country, Commissioner Eastman observed that the prosperous ones were listed in the above-mentioned footnote in the railroad brief.

Judge Fletcher closed with arguments in opposition to Mr. Walter's pooling plan which he called a proposal to return to the rejected recapture idea. Then came his reference to the forthcoming railroad plan for the distribution of revenues from increases on bituminous coal. Mr. Walter followed with a reply to the Judge Fletcher's comment and a further explanation of his pooling proposal. After which Judge Fletcher was allowed five additional minutes to discuss the needs of the anthracite roads and the proposal to increase Eastern coach fares.

Meanwhile the briefs had been coming in for a week or more with 34 going across the commission's press table on February 8, and 24 more on February 9, the deadline day.

The A. A. R. Brief

The Association of American Railroads brief, a 171-page document, asserted that the only practical solution of the railroad situation is an immediate increase in rates and revenues to meet higher costs. "No opposition, however industrious and determined it may be," the brief said, "can break down or explain away the facts

referred to herein as to the critical need of the railroads for increased revenues. Neither can any opposition, however ingenious, suggest any practicable method of securing for the railroads these necessary increased revenues other than by an increase in the charges made by them for their services, which are their only source of revenue."

One effect of the present lack of sufficient margin between revenues and expenses, the brief pointed out, has been the postponement of necessary improvements in road and equipment, in which connection the record "contains ample demonstration that the carriers cannot continue to render efficient transportation service unless they are enabled to secure new capital for improving their plant. This can be done only if they have sound credit.

"The reserve of maintenance accumulated during the 1920's has been used to meet the necessities of the depression. New types of improvement are required. So long as the railroad system of the country continues to be essential to its commerce and defense, the traffic transported must pay the cost of transportation, including the cost of maintaining the credit of the carriers in such condition as to enable them to maintain and develop their plant.

"It is apparent that while the increases proposed will not, in and of themselves, immediately restore the credit of the industry, as a whole, they are an essential step toward that end, and are likewise essential to permit many of the carriers to survive at all."

The present financial condition of the railroads, according to the brief, is the cumulative effect over a long period of years of the constant reduction in the margin between gross income and operating expenses, due to the failure of rates to advance in line with wages, taxes and prices. "If they are to have sound credit," the brief continued, "they must be able to take care of their fixed charges at all times with an adequate margin of safety and must be able in addition, at least in times of reasonable prosperity, to pay dividends on their stock sufficient to induce the investment of private capital therein."

Best Post-War Spread Below Pre-War's Worst

Prior to Government control of the railroads, according to the brief, the net railway operating income ran at a level exceeding 25 per cent of gross revenues, the average for the period 1900-1917 being 27.5 per cent. "In no year since the return of the railroads to their owners," the brief added, "has the spread, so measured, equaled that in the worst year prior to Government control. The spread in 1929, the highest that the railroads have had since the World War, was only 19.9 per cent, compared with 21.8 per cent in 1914, the worst year before the War. The average spread for the period 1921 to 1936 was only 16 per cent compared with 27.5 per cent for the period 1900-1917. In 1932 the spread was only 10.4 per cent, and disregarding the period of Federal control and the year 1920, during most of which the railroads still received the standard return guaranteed by the Government, the net railway operating income in 1932 was less than in any year since 1895 when gross revenues were only 34 per cent and the investment in the railroads was only 36 per cent of the 1932 figures. In 1936 the spread had risen to only 16.5 per cent. Such a spread was utterly inadequate to enable the carriers to meet the increased costs of operation which have come into play since 1936."

Next it is pointed out that the decline in the spread since the War years is not due to a decline in railroad revenues. "Operating revenues in 1929," the brief ex-

plained, "when the spread was 19.9 per cent were considerably more than twice as great as in 1907 when the spread was 29.6 per cent, and even in 1932 when the spread reached the all-time low of 10.4 per cent, gross revenues were higher than in any attained by the railroads prior to 1916. Since 1930 there has been practically no margin of coverage of fixed charges, and in three years, 1932, 1933, and 1934, there was a deficit. The carriers in the Southern and Western Districts failed to earn fixed charges in any of the years from 1932 to 1935. Moreover, even in a year such as 1936 when fixed charges were earned in all three of the districts, the spread between revenues and expenses was so narrow as to afford no assurance for the future."

Impaired Credit Not Due to Excessive Debt

The brief further pointed out, for the carriers as a whole, their impaired credit can not be attributed to an excessive amount of debt. "Since 1911," it said, "the net funded debt of the railroads has declined from 58.8 per cent to 44.5 per cent of the investment in road and equipment above depreciation, and from 59.6 per cent to 49.9 per cent of the investment in road and equipment after depreciation. These ratios now stand at practically the lowest points in recorded railroad history. If the burden of debt is measured not against the property but against the revenues of the railroads, the result is practically the same.

"The Commission has stressed the importance of prompt reorganization of the carriers now in bankruptcy. The record here shows that, with the minute margin between revenues and expenses which these carriers now have, reorganization would simply be a step toward a future default. Many of these carriers are actually threatened with operating deficits in 1938. The difficulty is not with the reorganization plans. It is with the narrowness of the spread, amounting to only 10.6 per cent, between revenues and expenses. With such a spread, the question is not one of the amount of the fixed charges that can be protected. The payment of any fixed charge, or even the maintenance of operations, is in peril. Any hope for the restoration of railroad credit through reorganization on the basis of such a level of earnings is vain."

That an increase in freight rates would not divert traffic to other forms of transportation was the opinion expressed in the brief. "The railroads have every reason to believe," the brief added, "that if their rates are increased as proposed herein, increases will be made in the rates of their competitors by amounts that will substantially preserve the existing relative situations of these competing agencies of transportation. There remains no basis, therefore, for the contention, which has been advanced in earlier cases involving increases in rail rates, that the increases herein proposed will result in the diversion of an enormous volume of traffic and will not be productive from a revenue standpoint. The water lines and the motor vehicle operators can no more live on the existing level of their rates than can the railways."

Eastern Passenger Fares

In respect to rates on Anthracite, the brief pointed out that the proposed increase, if allowed, will uniformly increase the present rates, whether they be truck-compelled or normal rates, less than 9½ per cent. It also discussed at length proposals for an increase in passenger coach fares in the Eastern territory from

two cents per mile to 2½ cents per mile. "Increased costs," the brief said in the latter connection, "apply to the passenger traffic as well as to the freight traffic of the carriers of the country. It is therefore necessary that their passenger traffic revenues be increased to the greatest extent possible." Owing to the substantial portions of the traffic moving over Eastern roads which is represented by passenger business, the brief added, "the Eastern lines cannot obtain a rateable increase in total revenues if the advances sought are applied only to freight traffic." It was also pointed out that the present coach fare of two cents per mile is the lowest basic fare which has ever been charged for general transportation of passengers in Eastern territory.

"Exhibits in this case show," the brief continued, "that the Eastern lines as a whole and the individual lines shown are sustaining severe losses in their passenger train service. The Eastern lines have made every possible effort to popularize their passenger business. They have spent substantial sums in advertising; they have provided faster schedules, modern equipment and particularly have spent a very large amount of money in air conditioning cars so that today practically all of the Pullman cars and coaches in the through trains are air conditioned. Bearing in mind that the proposal has met with practically no opposition from the public, the evidence as to passenger fares in the east justifies a finding of fact that the proposed increase in coach fares will substantially increase the net revenues of the eastern carriers."

Fairfax Harrison Dies at 69

(Continued from page 303)

In view of the fact that the "Southern serves the South," Mr. Harrison was particularly zealous to have the railway organization identify itself with that territory, and, wherever possible, its staff has been drawn from loyal sons of that section, who know the people and have a regard for its traditions—among these being a regard for the welfare of the negro population, and in particular the persons of that race who are employees of the Southern System.

He played an important part in the cultural life of the national capital and of Virginia, where he had his country home. He was an authority on the history of the Old Dominion and an accomplished Latinist. At his country place, Belvoir House, in Fauquier county, Virginia, he operated a large farm, and bore witness to his grasp of agricultural problems, as well as his knowledge of Latin literature, by a number of writings, among them a book on "Roman Farm Management." His linguistic ability likewise embraced French, in the literature of which he was widely read.

Usually early at his office in the Southern Railway Building, Mr. Harrison left a lasting impression on his associates by the volume of work he could encompass, the rapidity with which he assimilated the essential points of a problem, and the speed with which he was able to reach decisions. As one of his associates expressed it: "I might at times like to embellish a story a little with some people, but not with Mr. Harrison. With him there was a compulsion, born at first of respect, and then nourished by affection, which made it impossible to deal with him otherwise than with perfect frankness and candor—for that was the way he always dealt with us."

NEWS

2.27% Return Reported for '37

N.O.I. down \$77,000,000 from
1936 with December drop
of 63 per cent

Class I railways reported for 1937 a net railway operating income of \$590,180,565 as compared with \$667,174,165 in 1936 and \$868,719,483 in 1930, according to the Bureau of Railway Economics, Association of American Railroads. Last year's rate

per cent. In 1936, their net was \$386,178,862 or 3.2 per cent while in 1930 it was \$438,492,623 or 3.75 per cent. Gross in the Eastern district in 1937 totaled \$2,063,667,535, an increase of one per cent compared with 1936, but a decrease of 21.2 per cent compared with 1930; operating expenses totaled \$1,503,792,658, an increase of 5.3 per cent above 1936, but a decrease of 23 per cent below 1930.

The Southern district's 1937 net was \$74,160,008, a return of 2.34 per cent. In 1936, their net amounted to \$80,146,412 or a return of 2.53 per cent, and in 1930 it was \$88,405,629 or 2.68 per cent. Gross

Suggests Rails Own Ship Lines

Kennedy thinks carriers might
furnish funds to build
several new ships

The possibility that railroads might be willing to take a hand in rehabilitating the American merchant marine was suggested by Joseph P. Kennedy, Ambassador to England and retiring chairman of the Maritime Commission, in his recent testimony at a joint hearing before the Senate committees on commerce and on education and labor. Testifying on proposed amendments to the Merchant Marine Act of 1936, Mr. Kennedy included his reference to railroad ownership and operation among possible sources of private funds for the construction of ships which could be used in times of peace and still be available as naval auxiliaries in times of national emergency.

In the two fields where the ships he was discussing could be used—the coastal and intercoastal—Mr. Kennedy said they would offer competition with the railroads; and he thought that "there may be some suggestion made to Congress that the provisions of the Interstate Commerce Act—which does not allow any railroad to run a ship line in the same business—might be repealed." Some of the railroads, Mr. Kennedy went on, "have considerable money, and perhaps that will be a way out; perhaps the theoretical harm therefrom might be eliminated, so as to have some of these ships built and operated by the railroad companies."

The foregoing, the witness put forth "only as a suggestion" which "appears at first glance to have some good possibilities." He added, however, that "it should be carefully studied in all its aspects" before it is advanced further than the stating stage. Mr. Kennedy had no recommendation on the bill introduced by Senator McAdoo of California to exempt intercoastal ships from Panama Canal tolls.

Returning again to the question of suitable naval auxiliaries, the witness said that the government does not care where these ships are used, if they are available for the navy. "Therefore," he added, "if the railroads will build these ships and operate them, if we can protect ourselves, that is one method." Asked by Chairman Cope-land of the commerce committee if he knew of any railroads which would be interested in such a proposition, Mr. Ken-

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CLASS I RAILROADS—UNITED STATES

Twelve Months Ended December 31, 1937

	1937	1936	1930
Total operating revenues	\$4,166,068,600	\$4,051,196,452	\$5,280,234,535
Total operating expenses	3,119,064,325	2,930,170,375	3,931,043,991
Taxes	325,689,094	319,701,180	348,536,962
Net railway operating income	590,180,565	667,174,165	868,719,483
Operating ratio—per cent	74.87	72.33	74.45
Rate of return on property investment—per cent	2.27	2.57	3.36

of return—2.27 per cent—compares with 2.57 per cent in the previous year and with 1930's 3.36 per cent.

Meanwhile the December, 1937, net railway operating income was down 63 per cent from that of December, 1936—\$25,971,525 as against \$70,505,535. The latter, a return of 4.45 per cent, was above December 1930's \$48,505,431, or 3.06 per cent; the rate of return in December, 1937, was 1.63 per cent.

Gross operating revenues of the Class I roads in December totaled \$300,320,821, a decrease of 19.3 per cent compared with the same month in 1936 and a decrease of 19.6 per cent compared with the same month in 1930; operating expenses totaled \$243,354,092, a decrease of 5.4 per cent compared with December, 1936, and a decrease of 17.4 per cent compared with the same month in 1930. Gross in 1937 totaled \$4,166,068,600 compared with \$4,051,196,452 in 1936, and \$5,280,234,535 in 1930, an increase of 2.8 per cent in 1937 above 1936, but 21.1 per cent below 1930. Operating expenses in 1937 amounted to \$3,119,064,325 compared with \$2,930,170,375 in 1936, and \$3,931,043,991 in 1930—6.4 per cent greater than in 1936, but 20.7 per cent below 1930. Class I roads in 1937 paid \$325,689,094 in taxes compared with \$319,701,180 in 1936, and \$348,536,962 in 1930. Twenty-three Class I roads failed to earn expenses and taxes in 1937, of which ten were in the Eastern district, four in the Southern district and nine in the Western district.

Class I roads in the Eastern district in 1937 had a net railway operating income of \$333,062,664 which was a return of 2.75

in the Southern district in 1937 amounted to \$516,590,871, an increase of 3.1 per cent compared with 1936, but a decrease of 19.5 per cent under 1930; operating expenses totaled \$390,555,653, an increase of 5.2 per cent above 1936, but a decrease of 22.4 per cent under 1930.

Class I roads in the Western district in 1937 had a net railway operating income of \$182,957,893, or a return of 1.71 per cent. In 1936, the railroads in that district had a net of \$200,848,891, or a return of 1.88 per cent; in 1930 it was \$341,821,231 or 3.14 per cent. Gross in the Western district in 1937 amounted to \$1,585,810,194, an increase of 5.2 per cent above 1936, but a decrease of 21.4 per cent under 1930. Operating expenses totaled \$1,224,716,014, an increase of 8.4 per cent compared with 1936, but a decrease of 17 per cent under 1930.

Bonds Paid for Railroad Never Built

The last of \$585,000 bonds issued by St. Clair county, Mo., for a railroad that was never built, has been paid. In 1871 residents of the county voted \$250,000 in bonds as a bonus to promoters of the Tebo & Neosho Railway. The promoters sold the bonds but failed to build the line. Since that time, federal courts have held that the bonds were valid claims against the county. In 1917 a compromise was reached and new bonds totaling \$585,000 were sold. Before the compromise, interest and litigation had brought the indebtedness to more than the actual value of the property in the county.

Retirement Board Releases Report

Annual summary shows that
72,613 former employees
receive benefits

Approximately \$4,500,000 a month was being paid in pensions and annuities to 72,613 former railroad workers in November, 1937, under the Railroad Retirement Act, according to the annual report of the Railroad Retirement Board which was made public February 7. Total payments under the 1935 and 1937 Railroad Retirement Acts were more than \$33,000,000 up to November 30, 1937, more than four-fifths of which was paid out in the five months following the enactment of the 1937 law on June 24, 1937.

Of the monthly payments in force on November 30, 1937, 26,090 were annuities granted under the 1935 and 1937 acts and 46,523 were pensions paid to former railroad men who had been retired with pension by their former employers and who had been transferred to the Railroad Retirement Board rolls under the terms of the 1937 act, the report stated. In addition, annuity payments were being made in 286 cases to the widows of deceased annuitants who had elected this type of annuity prior to their death. Death benefits under the 1935 act were also being paid to 479 widows or dependents of deceased annuitants.

The average monthly payment to annuitants as of October 31, 1937, was \$70.30 a month, excluding certain partial awards. The report stated, that, in accordance with the Board's policy of speeding up payments in cases where a final settlement meant undue delay, partial payments were in many cases made on a temporary basis subject to later upward adjustment. The average pension payment on October 31 was \$58.08 a month. Under the provisions of the 1937 act, the Railroad Retirement Board, the report explained, transferred to its rolls over 54,000 persons who were on the pension or gratuity rolls of carriers on March 1 and July 1, 1937. First payments to 42,000 of these individuals were made on July 2, a little over a week after the passage of the act, and first payments to the remaining 12,000 were made within the next few days. Of these 54,000, about 6,000 were awarded annuities before October 1 and were taken off the pension roll. The following table shows the average monthly pension paid to the various groups of employees:

Occupation	Average monthly pension
Total	\$57.97
I. C. C. MAJOR OCCUPATIONAL GROUP	
I. Executives, officials, and staff assistants	109.15
II. Professional, clerical and general..	57.27
III. Maintenance of way and structures	40.21
IV. Maintenance of equipment and stores	49.67
V. Transportation (other than train, engine, and yard)	45.71
VI. Transportation (train and engine and yardmasters, switch-tenders, and hostlers)	75.76
Occupation unknown and non-railway occupation	61.76

REPORTING DIVISIONS OF AT LEAST 500 PERMANENT PENSIONERS*

1. Executives, general officers, and assistants	112.42
2. Division officers, assistants, and staff assistants	105.76
6. Clerks and clerical specialists	51.42
19. Traffic and other agents, inspectors, and investigators	89.23
29. Bridge and building gang foremen (skilled labor)	57.72
30. Bridge and building carpenters...	37.39
40. Gang or section foremen, track and roadway	42.48
42. Track and roadway section laborers	25.08
53. Gang foremen and gang leaders (skilled labor)	80.86
56. Carmen	47.41
61. Machinists	53.83
64. Skilled trades helpers (M. of E. and Stores)	37.01
70. Laborers (shops, engine-houses, and power plants)	30.71
78. Station agents	58.04
83. Telegraphers, telephoners, and towermen	50.91

(Continued on page 316)

November Deficit Was \$6,565,838

Drop from 1936's \$30,193,883
net brings 11 months net
below previous year

Class I railroads reported a deficit, after fixed charges and other deductions, of \$6,565,838 in November, 1937, as compared with a November, 1936, net income of \$30,193,883, according to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. For the first 11 months of last year the net income was \$90,973,784 as compared with

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 135 Reports (Form IBS) Representing 141 Steam Railways

TOTALS FOR THE UNITED STATES (ALL REGIONS)			
For the month of November 1937	1936	Income Items	For the eleven months of 1937 1936
\$32,440,919	\$72,376,521	1. Net railway operating income	\$563,210,940 \$596,668,624
15,664,172	12,485,263	2. Other income	128,096,342 132,119,702
48,105,091	84,861,784	3. Total income	691,307,282 728,788,326
1,704,578	1,647,637	4. Miscellaneous deductions from income	18,586,347 18,539,036
46,400,513	83,214,147	5. Income available for fixed charges	672,720,935 710,249,290
10,238,674	11,084,169	6. Fixed charges:	
41,604,940	40,778,816	6-01. Rent for leased roads	120,578,481 121,981,697
216,821	236,363	6-02. Interest deductions	447,473,871 454,180,119
52,060,435	52,099,348	6-03. Other deductions	2,523,748 2,519,061
*5,659,922	31,114,799	6-04. Total fixed charges	570,576,100 578,680,877
905,916	920,916	7. Income after fixed charges	102,144,835 131,568,413
*6,565,838	30,193,883	8. Contingent charges	11,171,051 11,076,051
16,570,103	16,036,496	9. Net income†	90,973,784 120,492,362
1,184,721	3,732,430	10. Depreciation (Way and structures and Equipment)	180,192,065 177,393,860
39,120,844	34,276,187	11. Federal income taxes	32,956,663 27,207,163
5,539,082	7,904,764	12. Dividend appropriations:	
		12-01. On common stock	113,226,292 99,697,494
		12-02. On preferred stock	26,172,515 26,317,950
		Balance at end of November 1937 1936	
		13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	\$686,520,181 \$680,220,344
		14. Cash	\$459,071,321 \$556,196,304
		15. Demand loans and deposits	17,048,268 21,689,247
		16. Time drafts and deposits	38,616,837 36,648,437
		17. Special deposits	83,761,116 104,834,533
		18. Loans and bills receivable	10,495,244 2,619,220
		19. Traffic and car-service balances receivable	58,794,091 67,577,143
		20. Net balance receivable from agents and conductors	51,385,583 60,071,347
		21. Miscellaneous accounts receivable	134,224,673 148,227,377
		22. Materials and supplies	383,661,332 297,703,076
		23. Interest and dividends receivable	29,459,812 35,489,424
		24. Rents receivable	2,346,621 2,985,615
		25. Other current assets	8,930,900 6,411,307
		26. Total current assets (items 14 to 25)	\$1,277,795,798 \$1,340,453,030
		Selected Liability Items	
		27. Funded debt maturing within 6 months‡	\$93,453,013 \$169,481,986
		28. Loans and bills payable§	\$211,578,226 \$216,403,914
		29. Traffic and car-service balances payable	78,886,152 86,395,223
		30. Audited accounts and wages payable	304,135,488 245,084,996
		31. Miscellaneous accounts payable	68,981,798 117,310,258
		32. Interest matured unpaid	632,012,210 517,668,671
		33. Dividends matured unpaid	1,818,400 2,177,035
		34. Funded debt matured unpaid	464,797,272 474,704,127
		35. Unmatured dividends declared	47,235,405 38,391,250
		36. Unmatured interest accrued	120,494,628 119,832,481
		37. Unmatured rents accrued	39,516,488 40,489,374
		38. Other current liabilities	18,668,004 24,874,638
		39. Total current liabilities (items 28 to 38)	\$1,988,124,071 \$1,883,331,967
		40. Tax liability (Account 771):	
		40-01. U. S. Government taxes	\$75,956,886 \$96,093,610
		40-02. Other than U. S. Government taxes	145,406,220 144,366,544

† The net income as reported includes charges of \$3,281,312 for November, 1937, and \$36,386,013 for the eleven months of 1937, \$1,512,398 for November, 1936, and \$16,189,363 for the eleven months of 1936 on account of accruals for excise taxes levied under the Social Security Act of 1935; also includes charges and credits resulting in a net charge of \$3,260,482 for November, 1937, and \$23,282,718 for the eleven months of 1937, because of provisions of the "Carriers Taxing Act of 1937," approved June 29, 1937, and repeal of the Act of August 29, 1935, levying an excise tax upon carriers and an income tax upon their employees, and for other purposes. (Public No. 400, 74th Congress.) The charges and credits were not handled in a uniform manner by all the carriers and separate totals are not available. The net income for November, 1936, includes charges of \$4,218,163 and for the eleven months of 1936 of \$35,075,455 under the requirements of an Act approved August 29, 1935, levying an excise tax upon carriers and an income tax upon their employees, and for other purposes. (Public No. 400, 74th Congress.)

‡ Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

§ Includes obligations which mature not more than 2 years after date of issue.

* Deficit or other reverse items.

NET INCOME OF LARGE STEAM RAILWAYS WITH ANNUAL OPERATING REVENUES ABOVE \$25,000,000

Name of railway	Net income after deprec.		Net income before deprec.	
	For the eleven months of 1937	1936	For the eleven months of 1937	1936
Alton R. R.	\$844,622	\$1,083,418	\$516,627	\$766,403
Atchison, Topeka & Santa Fe Ry. System†	6,401,032	6,905,784	16,909,722	17,301,047
Atlantic Coast Line R. R.	2,723,634	2,008,338	4,576,145	3,945,331
Baltimore & Ohio R. R.	332,996	2,138,073	6,971,214	8,894,962
Boston & Maine R. R.	92,534	2,078,359	1,383,133	581,530
Central of Georgia Ry.†	2,131,374	1,963,484	1,398,785	1,255,493
Central R. R. of New Jersey	1,680,064	2,810,941	368,244	1,414,528
Chesapeake & Ohio Ry.	31,745,756	39,242,660	39,323,212	47,014,117
Chicago & Eastern Illinois Ry.†	644,049	604,373	80,629	64,960
Chicago & North Western Ry.†	13,726,094	9,474,088	9,133,710	4,954,813
Chicago, Burlington & Quincy R. R.	4,016,770	4,272,304	8,457,053	8,482,847
Chicago Great Western R. R.†	897,531	160,726	408,650	624,921
Chicago, Milwaukee, St. Paul & Pacific R. R.†	12,806,468	12,969,845	7,792,899	8,056,241
Chicago, Rock Island & Pacific Ry.†	9,159,390	13,022,268	5,408,760	9,114,604
Chicago, St. Paul, Minneapolis & Omaha Ry.	2,430,829	1,782,774	1,886,751	1,231,537
Delaware & Hudson R. R.	757,566	1,066,266	211,347	62,097
Delaware, Lackawanna & Western R. R.	573,372	374,396	1,727,087	2,069,411
Denver & Rio Grande Western R. R.†	5,431,762	3,725,110	4,371,541	2,668,079
Elgin, Joliet & Eastern Ry.	1,672,110	1,406,363	2,506,152	2,228,099
Erie R. R. (including Chicago & Erie R. R.)	610,311	2,017,176	4,100,492	5,583,100
Grand Trunk Western R. R.	845,798	230,087	126,640	791,357
Great Northern Ry.	9,215,999	6,670,062	12,562,152	10,025,258
Illinois Central R. R.	192,005	1,156,028	5,517,247	4,824,066
Lehigh Valley R. R.	1,222,612	1,281,949	835,644	3,381,870
Long Island R. R.	2,081,702	936,984	1,011,099	132,496
Louisville & Nashville R. R.	6,890,732	8,648,930	10,733,935	12,480,469
Minneapolis, St. Paul & Sault Ste. Marie Ry.	4,898,140	5,052,784	3,813,793	3,931,158
Missouri-Kansas-Texas Lines	1,416,421	510,161	319,264	599,112
Missouri Pacific R. R.†	7,388,758	8,268,911	3,522,731	4,390,273
New York Central R. R.†	6,903,378	8,374,336	21,654,033	23,236,493
New York, Chicago & St. Louis R. R.	2,424,945	2,660,925	3,937,207	4,081,797
New York, New Haven & Hartford R. R.†	6,545,000	4,091,865	3,452,963	34,035,056
Norfolk & Western Ry.	29,428,005	29,959,304	33,851,536	94,110,464
Northern Pacific Ry.	1,966,945	2,762,950	1,016,616	115,200
Pennsylvania R. R.	26,743,401	33,730,691	49,641,101	53,983,271
Pere Marquette Ry.	1,661,901	2,150,101	4,010,819	4,476,325
Pittsburgh & Lake Erie R. R.	4,000,628	4,227,285	5,784,686	5,868,864
Reading Co.	6,383,191	5,951,546	9,219,969	8,857,758
St. Louis-San Francisco Ry.†	6,517,582	6,183,485	3,631,925	3,237,132
St. Louis Southwestern Lines†	827,260	97,462	278,564	457,326
Seaboard Air Line Ry.†	4,915,242	5,665,091	3,115,113	3,938,631
Southern Ry.	756,265	3,100,923	3,613,339	6,078,103
Southern Pacific Transportation System†	1,122,601	10,450,706	8,543,983	17,607,009
Texas & Pacific Ry.	2,374,505	1,955,043	3,431,349	3,024,173
Union Pacific R. R. (including leased lines)	14,745,034	17,242,471	21,002,229	23,185,689
Wabash Ry†	2,882,421	1,747,514	916,450	204,509
Yazoo & Mississippi Valley R. R.	1,205,201	682,822	1,660,795	1,167,655

† Report of receiver or receivers.

‡ Report of trustee or trustees.

§ Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle & Santa Fe Ry.

¶ Includes Boston & Albany, lessor to New York Central R. R.

‡ Includes Southern Pacific Company, Texas & New Orleans R. R., and leased lines. The report contains the following information: "Income reported hereon excludes offsetting debits and credits for rent for leased roads and equipment, and bond interest, between companies included herein; also excludes dividends received from certain separately operated solely controlled affiliated companies during period January 1 to November 30, 1937, of \$170,000 for the reason that the offsetting charges by such companies are made against profit and loss and therefore would not be offset in the net deficit of such companies. Operations of all separately operated solely controlled affiliated companies, resulted in a net deficit of \$3,381,929 for the eleven months ended November 30, 1937, and \$3,220,370 for the eleven months ended November 30, 1936, which is not reflected in this statement. Interest on bonds of, and rental income from, separately operated solely controlled affiliated companies, whether earned or not, are included in this statement, in order that such income credits will offset income debits reflected in the net deficit of such companies mentioned hereinbefore."

* Deficit.

\$120,492,362 for the comparable 1936 period.

Eighty roads reported deficits for November, 1937, and 52 reported net incomes; in November, 1936, only 46 reported deficits while 86 had net incomes. For the first 11 months of last year 68 roads reported net incomes and 64 had deficits; in the same 1936 period the score was tied—66 net incomes and 66 deficits. The consolidated statement and a statement showing the net income of roads having annual operating revenues above \$25,000,000 are given in the accompanying tables.

Pension Fund Collections

The Treasury Department's Bureau of Internal Revenue has made public a compilation, by collection districts and states, of collections during the calendar year 1937 under the Carriers Taxing Act and the Social Security Act. The former, which supplies money to finance the Railroad Retirement Act, brought in last year a total of \$91,916,461.02. However, this figure is subject to a refund or credit of \$194,159.98

collected under the old Carrier Taxing Act.

Illinois, with collections totaling \$14,139,089.25, led the states last year. Next in turn came New York with \$13,799,336.83 and Pennsylvania with \$13,100,715.34. Delaware's \$5.33 was the smallest state total listed.

Wheeler to Hold Hearings on Pettengill Bill

Senator Wheeler announced on February 9 that the Senate Interstate Commerce Committee had voted to hold hearings on the Pettengill bill, H. R. 1668, beginning February 23. The hearings will be held before the full committee.

Lea Bill Would Promote Tourist Travel

Representative Lea of California has introduced in the House H. R. 9212, a bill which would authorize the Secretary of Commerce, through the Bureau of Foreign and Domestic Commerce, to "encourage, promote, and develop travel to the United States, and the use of American registered

ships and of interstate transportation facilities for such purposes."

Also the bill would authorize and direct the Secretary of the Interior to "take such action as he deems necessary to encourage, promote, and develop tourist travel to and within the United States, including its territories and possessions." The bill also sets up a "United States Travel Board" to foster and encourage travel.

Six Killed in Derailment

Three passengers and three trainmen were killed on February 6 when an automobile derailed the "Texan" of the Missouri Pacific near Benton, Ark. Two baggage cars, four day coaches and two Pullman cars left the rails with the locomotive, which overturned.

Practices Affecting Dillonvale & Smithfield

Examiner Homer C. King has recommended in a proposed report that the Interstate Commerce Commission find that the Dillonvale & Smithfield is a mine spur plant facility of the United States Coal Company and that payments made by the New York Central for the use of such plant facility are unlawful.

Chicago Railway Group to Hold "Purchases and Stores Night"

The Western Railway Club will hold its next meeting on February 24 at the Hotel Sherman, Chicago. The program, which is entitled "Purchases and Stores Night," will feature an address by Charles D. Young, vice-president of purchases and stores and insurance, Pennsylvania. A reception and dinner will precede the meeting.

House Passes Deficiency Appropriation Bill

The House, on February 4, passed the First Deficiency Appropriation Bill which carried an appropriation of \$500,000 for the Railroad Retirement Board and an appropriation of \$300,000 for the Bureau of Motor Carriers of the Interstate Commerce Commission. The bill is now in the Senate awaiting action by that body.

G. E. Puts Turbo-Electric Unit Through Its Paces

The General Electric Company, which is building a twin-unit steam-electric locomotive, powered primarily by two oil-fired 2,500-hp. "steamotive" units, for service on the Union Pacific, has for some weeks been carrying on track tests with one completed unit at its plant in Erie, Pa. General plans for the locomotive were outlined in the *Railway Age* for March 20, 1937, page 468.

Railroad Support Group Formed

A group composed of railroad enthusiasts and security holders has been formed in New York under the title "Committee on Railroad Support," for the purpose of "defending the railroads against such legislation as they deem to be unfair, either nationally or in individual states." According to the introductory announcement of the body, the committee, which is restricted in membership, intends to meet monthly

for discussion purposes. Communications may be addressed to 10 Park avenue, New York.

Davis Urges Adequate Revenues for the Carriers in Buffalo Talk

The prediction that the railroads will spend for improvements at least one billion dollars annually for several years if the Interstate Commerce Commission will grant the increases proposed in the pending rate case, was made by J. M. Davis, president of the Delaware, Lackawanna & Western, in a talk delivered before the Bond Club of Buffalo, N. Y., on February 3. The carriers normally purchase 70,000 different articles annually, he pointed out, and railroad buying would restore jobs to thousands of workers. In this connection, Mr. Davis said that "potentially, the railroads are the most constructive agencies of recovery available for overcoming the current recession."

Katy Improves Tulsa-Houston Service

The Missouri-Kansas-Texas has improved its Tulsa, Okla.,-Houston, Tex., service by the inauguration of a new train, the "Black Gold," which it is operating from Tulsa to Denison, where the cars are combined with trains operating from Kansas City to points in Texas. The Black Gold leaves Tulsa at 2:45 p. m., and arrives at Denison at 7:00 p. m., where it connects with the "Katy Flyer," which arrives at Dallas at 10:05 p. m. and Houston at 7:45 a. m. Returning, the cars leave Houston at 11:00 p. m. and arrive at Dallas at 7:40 a. m. They leave Dallas at 4:00 p. m., as a part of the "Texas Special," and arrive at Denison at 6:30 p. m. The Black Gold leaves Denison at 7:15 p. m., and arrives at Tulsa at 11:30 p. m.

Brotherhoods Urge Stricter Rule of Trucks

Additional taxes and strict regulation of trucks were urged by the Brotherhood of Locomotive Firemen & Enginemen, the Order of Railroad Telegraphers, the Brotherhood of Railroad Trainmen and the Brotherhood of Railroad Signalmen of America before an Illinois legislative commission at Springfield, Ill., on February 3. Representatives of these organizations contended that trucks should be made to pay additional taxes that will cover the cost of their use of public roads, that they should be compelled to protect the public with liability and cargo insurance, that chauffeurs' duties at the wheel should be limited to eight hours in any one day, that the rolling equipment should be subjected to periodical mechanical inspection, and that fair rates and tariffs should be fixed by the state.

Terminal Services on Ocean-Rail Freight

The Interstate Commerce Commission, in I. & S. No. 4380, Receipt and Delivery Service at Eastern Ports, has found justified the proposed restriction of ocean-rail class rates now in effect between north Atlantic ports and points in the Southwest

so that they will apply only from and to docks or piers at these ports.

Commissioner Porter dissented, claiming that the suspended schedules amount to an attempted denial by respondent railroads of the right of protesting water lines to grant carload terminal service and pick-up and delivery service on l.c.l. shipments moving at joint rates over respondents' lines. "At the same time," he added, "respondents accord that service on like traffic moving over their lines and have made no attempt to bring about discontinuance of such terminal and pick-up and delivery service maintained by the Eastern rail lines with which protestants compete."

New York Railroad Club to Hear Beyer

The New York Railroad Club will hold its next meeting on Friday, February 18, in the auditorium of the Engineering Societies building, 29 West 39th street, New York, at 7:45 p. m. The address of the evening will be presented by Otto S. Beyer, chairman, National Mediation Board, Washington, D. C., who will speak on "Railroad Labor Relations Today." In his talk, Mr. Beyer will review briefly the developments of railroad labor relations and will dwell particularly on the significance of railroad labor relations as regards present day transportation problems. The subsequent meeting of the New York Railroad Club will be held on March 18 in the Engineering Societies building and will be under the auspices of the Westinghouse Electric & Manufacturing Co. The April meeting will consist of a novelty program and dinner, to be held on April 15 in the Hotel Commodore, New York.

Old Stockholders Intervene in Land Grant Case

Dissenting stockholders of the Northern Pacific Railroad Company in 1896 have filed a claim of intervention in the government-Northern Pacific land grant case in the federal district court at Spokane, Wash., charging fraud and collusion on behalf of the re-organizers. Their claim is for \$3,255,900, the par value of their railroad stock before the re-organization, while in addition they seek all unpaid dividends and accrued interest on the stock since the re-organization in 1896. The suit was filed by Attorney R. L. Edmiston on behalf of W. L. Haehulen and several other dissenting stockholders. The dividends sought are estimated at \$7,000,000. At the time of the re-organization of the Northern Pacific Railroad Company into the Northern Pacific Railway Company, owners of the stock in the original company paid \$15 a share for common and \$10 for preferred stock in an exchange of old stock for new.

"Soda Ash Johnny" Passes Away

John M. Horan, in active service on the Chicago, Milwaukee, St. Paul & Pacific, died Friday, February 4, at the age of 100 years and 12 days; had he lived until April 17 this year, he would have completed 83 years of continuous service with the railroad. Probably this marks the world's record for continuous service with a rail-

road. On his one hundredth birthday, Saturday, January 22, he was given a birthday party at the Milwaukee shops of the railroad, President Scandrett and Vice-President Gillick attending, with a group of leading citizens of Milwaukee and many railroad friends.

"Soda Ash Johnny," as he was affectionately called, entered the service of a predecessor of the Chicago, Milwaukee & St. Paul, April 17, 1855. He served an apprenticeship as a machinist, later became a locomotive fireman and then was promoted to locomotive engineer. When the Chicago, Milwaukee & St. Paul purchased the Dakota Southern Railroad, Mr. Horan took charge at Yankton, S. D., as general foreman. Here, because of the difficult water situation he developed a system of treatment of water for locomotive boiler use. Since that time he has specialized on controlling boiler feedwater conditions and the washing and care of boilers on the system, being engaged in that occupation at the time of his death.

Employment Off in January

Railway employment fell off 4.8 per cent, with maintenance of way and structures and maintenance of equipment and stores forces dropping respectively 7.38 per cent and 5.99 per cent, during the one-month period from mid-December, 1937, to mid-January, according to the Interstate Commerce Commission's compilation based on preliminary reports. The total number of employees as of the middle of January was 959,670 as compared with a mid-December figure of 1,008,037.

The drop as compared with January, 1937, was 10.74 per cent, with maintenance of way and structures forces falling off 12.5 per cent and maintenance of equipment and stores 17.98 per cent. Train and engine service forces were down 4.79 per cent from December and 10.93 per cent from January, 1937. The index number, based on the 1923-1925 average as 100 and corrected for seasonal variation, stood at 56 in January as compared with 62.8 in January, 1937.

Court Declares H. & M. Exempt from Railway Labor Act

The Hudson & Manhattan, an electric road operating rapid transit trains between New York and Jersey City, N. J., and Hoboken, and participating in a joint service with the Pennsylvania between New York City and Newark, N. J., has been declared exempt from the provisions of the Railway Labor Act by a decision handed down by Judge J. M. Woolsey in the United States District Court for southern New York on February 4. In effect, the decision is a declaratory judgment which establishes the status of the road as an electric interurban carrier entitled to exemption from the Railway Labor Act. Secondly, it enjoins the United States attorney for the district from prosecuting the road for failure to comply with the provisions of the act during the litigation and grants an injunction enjoining such prosecution in the future.

The Hudson & Manhattan's bill of complaint, which was filed in August, 1936,

challenged, in the main, a finding of the Interstate Commerce Commission which held that the road is not entitled to exemption from the act but is a part of a general system of steam railroad transportation.

The Interstate Commerce Commission and three labor unions having jurisdiction over H. & M. employees—the Brotherhood of Railroad Trainmen, the Brotherhood of Locomotive Engineers and the Brotherhood of Railroad Signalmen of America—intervened. A similar bill of complaint seeking restraint of the United States attorney for the district of New Jersey has been filed with the federal court of that district and awaits review at a date as yet unannounced.

Hearings On Pennroad Are Concluded

Senator Wheeler's subcommittee investigating railroad finance, on February 4, concluded that phase of the investigation dealing with the Pennroad Corporation. At the conclusion of the hearing the Senator charged that the Pennsylvania had dominated Pennroad by setting up voting trustees for a period of 10 years who were merely agents of the railroad and did its bidding. He called upon A. J. County, vice-president in charge of finance and corporate work of the Pennsylvania, to explain the reason for not allowing the stockholders of Pennroad to control the corporation. Mr. County asserted that the trustees were doing a good job for the Pennroad Corporation and he saw no reason for changing the set-up at this time.

Senator Wheeler also announced that when the committee resumes hearings in a week or 10 days, it will take up either the Association of American Railroads or the Wabash.

Pennsylvania Appeals Injunction Against Full-Crew Law

An appeal from the continuance of a preliminary injunction issued by the Court of Common Pleas of Dauphin county, Pennsylvania, enjoining enforcement of the full-crew law enacted last year by the state legislature, was heard last week before the state Supreme Court in Philadelphia, Pa. The Pennsylvania Public Utility Commission and state Attorney General C. J. Margiotti have opposed the restraining injunction as "arbitrary and capricious", while John Dickinson, representing the Pennsylvania Railroad, has held that the full-crew law is not necessary as a safety measure and would incur burdensome increases in operating costs.

The latter also declared that the appellants err in seeking to have the court at this time decide the case on the constitutionality of the full-crew act and argued that such disposition would be equivalent to an assumption by the Supreme Court of original jurisdiction vested in the lower courts. As yet no determination of the merits of the case has been made. The injunction of the Dauphin County Court has been issued only to enjoin enforcement of the act pending such determination of its constitutionality. Earlier developments in the controversy were reported in the *Railway Age* of June 19, 1937, page 1033.

Explosives by Motor Vehicle

The Interstate Commerce Commission has transmitted to shippers and motor carriers, for their criticism and comment, a second draft of certain proposed regulations on the Transportation of Explosives and Other Dangerous Articles, which are being considered as Part VI of the Motor Carrier Safety Regulations and which have been prepared pursuant to Order Ex Parte No. MC-13.

The revised draft has been augmented and rearranged in accordance with the criticisms submitted upon a preliminary draft issued in May, 1937. Neither of these drafts has been considered by the commission. The commission, the letter of transmittal says, "welcomes your comments and criticisms as to this second draft with respect to any changes which seem appropriate to be made before they are submitted to the commission." The rules and regulations are drawn for application to common, contract and private motor carriers. Notice as to time and place of hearing or hearings will be given subsequently, and comments and criticisms should be filed on or before March 1.

Equipment Depreciation Orders

The Interstate Commerce Commission has issued additional sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies, prescribing depreciation rates for equipment of eight roads, including the Chesapeake & Ohio, the Bessemer & Lake Erie and the Chicago & North Western. The composite percentages, which are not prescribed rates, range from 2.71 per cent for the State Belt of California to 5.72 per cent for the Wyoming.

The C. & O. composite percentage of 4.29 is derived from the following prescribed rates: Steam locomotives, 3.82 per cent; freight-train cars, 4.52 per cent; passenger-train cars, 3.21 per cent; floating equipment, 3.25 per cent; work equipment, 4.67 per cent; miscellaneous equipment, 17.56 per cent. The B. & L. E.'s 3.36 per cent composite figure comes from prescribed rates as follows: Steam locomotives (owned), 4.05 per cent; steam locomotives (leased), 3.09 per cent; other locomotives 4.8 per cent; freight-train cars (owned), 3.19 per cent; freight-train cars (leased), 3.06 per cent; passenger-train cars, 3.5 per cent; work equipment (owned), 3.78 per cent; work equipment (leased), 2.77 per cent; miscellaneous equipment, 14.75 per cent. The sub-order, which modifies a previous one with respect to the C. & N. W., was issued to provide separate rates for equipment in streamlined trains as follows: Locomotives other than steam, 6.4 per cent; passenger-train cars, 6.4 per cent.

Freight Car Loading

Loading of revenue freight for the week ended January 29 totaled 553,176 cars, a decrease of 17,157 cars or 3 per cent below the preceding week, a decrease of 99,846 cars or 15.3 per cent below the corresponding week in 1937, and a decrease of 309,170 cars or 35.9 per cent below the same

week in 1930. All commodity classifications except coal showed decreases under the preceding week, while all commodity classifications except grain and livestock showed decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, January 29

Districts	1938	1937	1936
Eastern	120,269	153,859	148,235
Allegheny	101,999	144,739	122,819
Pocahontas	39,002	28,627	45,943
Southern	90,888	86,128	89,032
Northwestern ..	62,209	79,692	75,677
Central Western	91,730	105,451	90,707
Southwestern ..	47,079	54,526	49,477
Total Western Districts	201,018	239,669	215,861
Total All Roads	553,176	653,022	621,890
Commodities			
Grain and Grain Products	31,611	29,607	30,574
Live Stock	12,890	12,421	11,788
Coal	129,344	139,918	174,444
Coke	6,083	11,693	11,687
Forest Products	24,759	30,875	28,608
Ore	6,973	10,700	5,380
Merchandise l.c.l.	142,180	153,171	148,687
Miscellaneous ..	199,336	264,637	210,722
January 29	553,176	653,022	621,890
January 22	570,333	665,346	584,637
January 15	580,600	696,035	611,347
January 8	552,314	700,046	614,853
January 1	457,359	588,263	541,826
Cumulative Total, 4 Weeks	2,256,423	2,714,449	2,432,727

In Canada.—Car loadings for the week ended January 29 declined from 45,905 for the previous week to 44,439, according to the weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
January 29, 1938...	44,439	22,369
January 22, 1938...	45,905	24,692
January 15, 1938...	45,471	22,832
January 30, 1937...	47,100	27,158
Cumulative Totals for Canada:		
January 29, 1938...	179,839	90,221
January 30, 1937...	185,006	106,715
January 25, 1936...	153,767	85,370

White House Rail Talks May Await Rate Decision

White House discussions of the railroad situation may be delayed until after the Interstate Commerce Commission has rendered its decision in the Ex Parte 123 rate-increase case, President Roosevelt said at his February 9 press conference. The plan for the discussions, which were suggested by Chairman Splawn of the Interstate Commerce Commission, was announced by the President last week when he said that they would be in the nature of preliminary talks—not to be dignified with the term conference. Also, it was not contemplated that rates would be among the subjects considered.

I. C. C. Chairman Splawn has invited the following to attend the meeting: I. C. Commissioners Eastman and Mahaffie; Senators Wheeler and Truman; Chairman Lea of the House committee on interstate and foreign commerce; George M. Harrison, chairman of the Railway Labor Executives' Association; Carl R. Gray, vice-chairman of the Union Pacific board; Henry Bruere, president of the Bowery Savings Bank, New York; Assistant Secretary of Commerce Draper;

Chairman Jones of the Reconstruction Finance Corporation; Chairman Douglas of the Securities and Exchange Commission; and W. W. Alexander of the Farm Security Administration.

The President did not state definitely that he would postpone the meeting until after the Ex Parte 123 decision, but said he would attempt to find out if that decision is due soon. If so he would prefer to defer the meeting until after that time. All hearings and oral arguments in Ex Parte 123 were concluded on February 9, which was also the deadline for the filing of briefs. Thus the case stands submitted to the commission.

Sound Policy Would Keep Railroads Healthy

Fair rates, effective consolidations, and an independent labor tribunal, were cited as important factors in a sound transportation policy by Ralph Budd, president of the Chicago, Burlington & Quincy, in an address before the Chicago Association of Commerce on February 9. Mr. Budd contended that there can be no basis for the contention that the present difficulties of the railways are due to excessive capitalization, when they are earning practically no return on any capitalization. He was of the opinion that the change in basic instructions to the Interstate Commerce Commission and its interpretation thereof, in dealing with railway rates, explain the present railway crisis and that the most important revision that could be made in the Interstate Commerce Act would be the re-establishment of the fair return rule of rate making, with a just and workable method of recapture.

Extensive consolidations, he said, hold the most promise of substantial economies and operating advantages, as well as opportunity to improve the service. By reducing the number of railways from 850 operating companies to 20, he continued, overhead organization would be eliminated; traffic would be concentrated on the most favorable rates; competition would be retained; and all of the indispensable advantages of private operation would be preserved. The consolidation provisions of the law should be made workable and effective and should be made to include compulsory power as was done in the British Railway Act of 1921. Mr. Budd also discussed the labor provisions of our act, expressing the opinion that an independent labor tribunal with responsibility and authority clearly and fairly enunciated would put rules and working conditions on a reasonable and sound basis, adapted to present day conditions.

I. C. C. Examiner Recommends Plan for Cotton Belt

Finance Examiner J. V. Walsh of the Interstate Commerce Commission on February 5 recommended that the commission adopt a plan of reorganization for the St. Louis Southwestern which would reduce the stock holdings of the Southern Pacific in the road from 87 per cent of the total to about 47.5 per cent. The proposed plan would also reduce the total capitalization from \$107,634,678 to \$81,060,439, without allowing for claims for guilder value. The

total fixed interest charges would be \$1,327,270 as compared with \$3,379,341 in 1936. If the claim for guilder value is allowed in full, the total capitalization would be increased to \$97,792,002.

Examiner Walsh stated in his proposed report that the new capital structure should be so arranged as to make practicable the lease of the property by the Southern Pacific. He also felt that the plan should contain no contingent interest debt and recommended that preferred stock be used in place of contingent interest bonds. Under the proposed plan the following obligations would remain undisturbed: \$957,000 equipment trust obligations, \$20,000,000 first mortgage certificates, \$500,000 Gray's Point Terminal bonds, and \$450,000 Shreveport Bridge & Terminal bonds.

The Railroad Credit Corporation's loan of \$1,500,000 would be extended for 10 years at 4 per cent interest, while the Southern Pacific, for its loan of \$17,882,250 plus interest of \$2,260,145, would receive \$474,000 of Southern Illinois & Missouri Bridge Company first mortgage 4's, \$2,390,300 of new second mortgage bonds, \$12,461,497 of preferred stock, \$5,290,598 of common stock and \$6,334,295 of additional preferred stock.

The old preferred stockholders would receive 20 per cent in new common stock while the old common holders would get 10 per cent in new common stock.

Correction

G. E. Karlen, president of the Karlen-Davis Lumber Company, was erroneously reported as having testified at Portland, Ore., in opposition to the carriers' application for a 15 per cent increase in freight rates. Mr. Karlen testified that "the success of our business is entirely dependent upon the prosperity of the railways. Likewise the mills whose products we handle are to a large extent in the same position. When one takes into consideration the normal fluctuations of the mill base value of lumber, such as has been experienced for instance during the past eight or nine months, the proposed maximum increase in freight rates of 6 cents per hundred pounds is dwarfed by the normal fluctuations of lumber prices."

"Taking an average mill return of \$20 per 1,000 board feet for a concern having facilities for refining its product, and adding the freight to an average destination of 47½ cents per 100 pounds on an approximate average weight of 2,475 pounds per 1,000 board feet, the transportation cost would be approximately \$12 per 1,000 board feet. The requested maximum increase in freight rates of 6 cents per 100 pounds on lumber would amount on the average to about \$1.46 per 1,000 board feet in added transportation costs, which is approximately only 4½ per cent of the wholesale delivered price and would be far less of an increased percentage on the retail cost to the ultimate consumer, thereby working no appreciable hardship on anyone. During the past year the mill base value of lumber has fluctuated back and forth over four times that amount. If freight rates are increased and the railroads are enabled as a result to pur-

chase their normal requirements of forest products it will reflect, in advancing the market on lumber, to the benefit of the mills.

"The increase in freight rates will restore the business of many of the railroads, which are now heading toward bankruptcy. The Pacific Northwest lumber industry needs the railroads, and, in fact, cannot get along without them, and if they are to continue in business they must have an adequate income if they are to continue to operate satisfactorily. We urge that the increase in freight rate asked by the railroads be granted."

Rates Section Included In New Farm Bill

The Agricultural Adjustment Act of 1938, H. R. 8505, which has been reported to both houses by the conference committee and which was passed by the House on February 9, contains a section which authorizes the Secretary of Agriculture to make complaint to the Interstate Commerce Commission with respect to rates, charges, tariffs, and practices relating to the transportation of any farm products and to prosecute such complaints. Before proceeding to hear and dispose of any complaint filed by any person other than the Secretary, involving the transportation of farm products, the commission must cause the Secretary to be notified, and upon his application must permit him to appear and be heard. To carry out these provisions the commission is authorized to avail itself of the cooperation, records, and facilities of the Department of Agriculture. The Secretary is also authorized to cooperate with and assist cooperative associations of farmers making complaints to the commission with respect to rates, charges, tariffs, and practices relating to the transportation of farm products.

The Senate amendments to the bill did not contain this provision, but the conferees decided to adopt the House provision. Representative Doxey of Mississippi, in explaining the conference report, had the following to say regarding this provision:

"We all know that there is at present a serious and devastating inequality in freight rates that discriminate against our raw agricultural products. I could cite you many instances in this regard, but time will not permit. All we could do to remedy that situation in this bill was to clothe the Secretary of Agriculture with the power to take the case of agriculture to the Interstate Commerce Commission and there intervene in any suit where the public interests are involved and have the power to prosecute and appeal a decision involving the public interests when he thinks agriculture has been discriminated against, and the freight rates are not equitable and just.

"In other words, we designate the Secretary of Agriculture as our friend at court with powers to act and, if possible, to secure results that will be beneficial to agriculture in the adjustment of freight rates on agricultural commodities. We feel that this is a step in the right direction, for heretofore agriculture has not had any friends at court, and if we did

have, they were not clothed with any power to act or pursue the claims of agriculture to a finality with reference to freight rates."

N. C. & St. L. Files Petition In the Supreme Court

The Nashville, Chattanooga & St. Louis has filed a petition with the Supreme Court asking for an interpretation of the collective bargaining provisions of the Railway Labor Act. The company seeks a review of a decision of the Circuit Court of Appeals for the Sixth Circuit upholding a certificate of the National Mediation Board, issued upon the result of an election held by the Board to determine the bargaining agent for the five crafts of shop employees. The National Mediation Board included in the list of employees eligible to vote so-called "furloughed" employees, men who were not actually working for the railroad at the time of the election, but carried on the seniority roster as subject to recall. The certified representative received a majority of the votes which were cast, but not a majority of the votes of the employees declared by the Board to be eligible to vote.

The contention of the railroad is that the court of appeals erred in ruling that furloughed workers are "employees" within the meaning of the statute. The petition is based on the following points:

(1) The statutory definition limiting the choice of a representative to employees in the service of a carrier is plain and unambiguous, and therefore is not susceptible to construction;

(2) Furloughed employees have no present status in the conduct of interstate commerce;

(3) The interest of furloughed employees in the selection of an employee representative is contingent both upon the occurrence of occasion for reemployment and their then willingness or desire to re-enter the service of the carrier.

The road also raises the question of the validity of holding that certification of the representative chosen by a majority of those voting was valid by reason of a ruling of the Board, made subsequent to issuance of the election notice, that eligible voters not voting are assumed to assent to the will of the majority. Its contention is that the previous ruling of the Board requiring the vote of a majority of the eligible voters in each craft to effect a change in representation is still controlling.

The case is docketed as *The Nashville, Chattanooga & St. Louis v. Railway Employees Department of the American Federation of Labor*.

Santa Fe to Have Total of 13 Streamline Trains

The Atchison, Topeka & Santa Fe on and after February 22 will place 12 streamline trains in service, thereby bringing the total of streamline trains operated by this railroad to 13. Of the 12 trains, six, comprising the Chief, will include 12 light-weight cars and a steam locomotive each; one, the new Super Chief, will include nine light-weight cars and a Diesel-electric locomotive; two, comprising the El Capitan,

will include five light-weight cars and a Diesel-electric locomotive each; one, the Kansas Cityan, will include seven light-weight cars and one Diesel-electric locomotive; one, the Chicagoan, will include seven light-weight cars and one Diesel-electric locomotive; and one, the San Diegan, will include five light-weight cars and one Diesel-electric locomotive.

In announcing these new trains, the Santa Fe refers to them as "the largest fleet of ultra-modern, light-weight streamlined trains in the world. The addition of 12 new streamliners," the announcement continues, "will give the Santa Fe 13 such trains, 7 of them Diesel drawn, and brings the company's supply of light-weight steel cars to a total of 151. Not only is the Santa Fe increasing its transcontinental service, but for the first time it is turning to light-weight equipment and Diesel-electric power to bring important regional or intermediate points closer together. The Santa Fe's program to provide modern rail transportation is attracting widespread attention. Germany has always been considered the home of the Diesel-electric engine, but before summer the Santa Fe will have in operation the greatest collection of railroad Diesel-electric power ever assembled, a total of 30,900 hp., 23,400 in road service and 7,500 in switching service, more than all the railways of either Germany or France."

Under the program for new streamline trains, the present Chief, operating on a daily schedule between Chicago and Los Angeles, will be re-equipped with six complete trains of 12 light-weight cars each and a series of steam locomotives, one of which is of streamline design. These locomotives are capable of making from 100 to 110 m. p. h.

The Super Chief, which will be placed in service on February 22 between Chicago and Los Angeles, will be an all-Pullman train and a companion to the Super Chief now in service. The two trains, after February 22, will provide semi-weekly service with departure from Chicago on Tuesdays and Saturdays and from Los Angeles on Tuesdays and Fridays.

The El Capitan, which also goes into service between Chicago and Los Angeles on February 22, will consist of two light-weight, streamlined, stainless steel coach trains which will make two round trips each week on the same schedule as the Super Chief. The El Capitan will leave Chicago at 5:45 p. m. on Tuesdays and Saturdays and will arrive in Los Angeles at 7:30 a. m. on Thursdays and Mondays, while eastbound the train will leave Los Angeles at 1:30 p. m., on Tuesdays and Fridays and arrive in Chicago at 7:15 a. m. on Thursdays and Sundays. This train will consist of five light-weight, stainless-steel cars, including a baggage-dormitory chair car, two regular chair cars, one lunch counter-diner and one chair observation car, with a total capacity for 192 passengers. The trains will be drawn by 1,800-hp. Diesel-electric locomotives.

The Kansas Cityan and the Chicagoan, the westbound and eastbound trains which will be placed in service between Chicago and Kansas City on April 1, will operate on a schedule of 7½ hours. Each train will carry seven cars, with a total seat-

ing capacity, including seats in the dining car and lounge space, for 300 passengers.

The San Diegan will be placed in service between Los Angeles and San Diego about March 15, on a schedule of two round trips daily. It will consist of five cars.

The club-baggage, lounge, diners and chair cars for these new streamliners were built by the Edward G. Budd Manufacturing Company, while the sleeping cars for the Super Chief and the Chief are Pullman cars built by the Pullman-Standard Car Manufacturing Company. The steam locomotives were built by the Baldwin Locomotive Works and the Diesel-electric locomotives by the Electro-Motive Corporation.

Ground Broken for Railroad World's Fair Exhibit

Ground was broken for the rail transportation building at the New York World's Fair of 1939 on the afternoon of February 9, at 3 p. m., when J. M. Davis, president, Delaware, Lackawanna & Western, and chairman of the Eastern Presidents' Conference World's Fair Committee, dug out the first spadeful of earth and completed the ceremony by operating a steam shovel. Previous to the ground-breaking, Grover A. Whalen, president of the World's Fair Corporation, gave a luncheon to Eastern rail executives in the fair administration building. Here as guest speaker, Mr. Davis declared that the railroads "recognize and welcome the opportunity that the New York World's Fair gives them to tell their story." Responding, Mr. Whalen observed that the carriers are the first individual exhibitors to break ground for a fair building. "The railroads have always been doing things on a magnificent scale and it is their habit to get them done of time," he added.

Reduced All-Expense Round-Trip Fares Tried by Central Argentine

Once a week the Central Argentine will offer a round trip fare of 30 pesos (\$9.90) which includes meals and incidental expenses, for an 864-mile journey from Buenos Aires to Cordoba and return. Specially introduced for this service is a new train called "El Popular," an all-coach train providing a total seating capacity of 500, to provide fast daily service between Buenos Aires, Cordoba and intermediate points.

Car Officers' Committees Are Appointed

After a lapse of six years, the Car Department Officers' Association held a two-day annual meeting at Chicago last fall, which was sufficiently promising that an attempt is now being made to revive and reorganize the association's activities as a valuable supplement to the work of the A. A. R. Mechanical Division. In line with this objective, President K. F. Nyström, mechanical assistant to the chief operating officer, Chicago, Milwaukee, St. Paul & Pacific, has recently announced the appointment of the following standing committees with specific duties and committee chairmen as follows:

General Committee—To make the association function effectively in improving the knowledge and acquaintance of individual members and promoting greater efficiency in railway car departments: E. J. Robertson, superintendent car department, M. St. P. & S. S. M., Minneapolis, Minn., chairman.

Car Construction and Maintenance—To discuss the latest approved A. A. R. recommendations for passenger- and freight-car design and make recommendations for improved methods in connection with car construction and maintenance: J. McMullen, superintendent car department, Erie, Cleveland, Ohio, chairman.

Shop Operation, Facilities and Tools—To make recommendations for the economical operation of freight- and passenger-car shops, including improved shop facilities, such as buildings, cranes, machinery, etc.: J. A. Deppe, superintendent car department, C. M. St. P. & P., Milwaukee, Wis., chairman.

Passenger-Train-Car Terminal Handling—To make recommendations for the economical operation of passenger-car yards, including car cleaning, maintenance of air conditioning equipment, etc.: G. R. Andersen, district master car builder, C. & N. W., Chicago, chairman.

Lubricants and Lubrication—To discuss the latest A. A. R. rules covering lubrication and make recommendations for further improvement in the lubrication of freight and passenger cars: L. R. Wink, assistant superintendent car department, C. & N. W., Chicago, chairman.

Freight-Car Inspection for Commodity Loading—To make recommendations for the inspection and selection of cars for commodity loading; cleaning freight cars, eliminating oil spots, odors, etc.: F. G. Moody, master car builder, N. P., St. Paul, Minn., chairman.

Interchange Rules—To report on car inspection and interchange problems, reviewing the latest rule changes approved by the A. A. R. and recommending desirable further revisions: M. R. Fitzgerald, general car inspector, C. & E. I., Danville, Ill., chairman.

Loading Rules—To discuss the approved changes in A. A. R. loading rules and make recommendations for loading methods and other details essential to better service: C. J. Nelson, superintendent of interchange, Chicago Car Interchange Bureau, Chicago, chairman.

Car-Repair Billing—To analyze the approved changes in A. A. R. billing rules and make recommendations for further improvements in these rules: D. E. Bell, A. A. R. instructor, C. N., Winnipeg, Man., chairman.

Equipment Painting—To study general painting problems and report on improved methods of painting freight- and passenger-car equipment: L. B. Jenson, passenger shop superintendent, C. M. St. P. & P., Milwaukee, Wis., chairman.

Seatrains Operations and Rates

Several questions in connection with Seatrain Lines, Inc., which operates vessels carrying freight in railroad cars on a route between Hoboken, N. J., and Belle Chasse, La., via Havana, Cuba, were disposed of

by the Interstate Commerce Commission in a decision made public this week. The report in No. 25,727, Seatrain Lines, Inc., v. Akron, Canton & Youngstown, et al., also includes No. 27,011, Gulf Refining Company v. the Central of New Jersey, et al., and No. 27,445, Agwilines, Inc., et al., v. Seatrain Lines, Inc., et al.

The majority report, by Commissioner Meyer, was accompanied by five separate expressions from individual commissioners. Chairman Splawn wrote a brief concurring opinion, while Commissioners Eastman, Mahaffie, Miller and Caskie each filed a partial dissent. Commissioner McManamy agreed with Commissioner Mahaffie, while Commissioner Rogers did not participate in the disposition of the case.

The primary issue in the title case (No. 25,727) was whether rail carriers that refuse to permit delivery of their cars to Seatrain participate in through routes (the existence of which they refuse to recognize) with that complainant. Complainants in No. 27,445 were break-bulk water carriers operating in competition with Seatrain; they alleged that the maintenance of joint rail-water rates, via Seatrain, no higher than those maintained with complainants was in violation of the Interstate Commerce Act. Complainant in No. 27,011 alleged that rates and charges on motor fuel anti-knock compound in tank cars moving via Seatrain from Carney's Point, N. J., to West Port Arthur, Tex., were unreasonable and unduly prejudicial.

The commission's findings are summarized in the report as follows:

Through routes found to exist in connection with Seatrain Lines, Inc., between points in trunk line and New England territories on one hand and southwestern territory on other hand.

Establishment and maintenance of through routes and joint rates in connection with Seatrain Lines, Inc., between points in official territory on one hand and southwestern territory and a portion of southern territory on other hand found to be in the public interest, and maximum joint rates prescribed.

Rates and charges on domestic, export, and import traffic between Belle Chasse, La., and points in portions of southern territory found not unreasonable but unduly prejudicial. Damage as a result of such undue prejudice not shown.

Rates on domestic, export, and import traffic between Hoboken, N. J., and official territory not shown unreasonable or unduly prejudicial.

Charges assessed for movement of empty cars not shown unlawful.

Defendants' failure to issue through export and domestic bills of lading in connection with shipments to move over Seatrain Lines, Inc., found unlawful.

Alleged violation of section 7 of the act not established.

Failure of certain rail carriers to maintain higher joint rates with Seatrain Lines, Inc., than with break-bulk water lines found not unduly prejudicial or otherwise unlawful.

Rates on motor fuel anti-knock compound from Carney's Point, N. J., to West Port Arthur and Smiths Bluff, Tex., via Seatrain Lines, Inc., found not unreasonable or unduly prejudicial.

The majority report discusses briefly the Seatrain services and previous I. C. C. decisions in connection therewith. It points out how the terminal facilities at Hoboken are leased from the Hoboken Manufacturers, which Seatrain controls; while the Belle Chasse terminal facilities are located on property of the New Orleans & Lower Coast, a subsidiary of the Missouri Pacific, which latter and its other affiliate, the Texas & Pacific, own minority stock interests in Seatrain. In a previous decision Seatrain was found to be a common carrier by water subject to I. C. C. jurisdiction. The report proceeds in turn to

summarize the issues, to discuss jurisdictional questions, and to set forth facts of record and reasoning which led to the above findings.

Chairman Splawn concurred with the reservation that a later showing as to the cost and value of the service may warrant a modification of the finding with respect to differentials. Commissioner Eastman, dissenting in part, expressed the view that the interest of the M. P. and T. & P. in Seatrain is unlawful; he also disagreed with the finding that higher rates should be allowed via Seatrain than via the break-bulk lines. Commissioner Mahaffie (with Commissioner McManamy accepting his views) concurred with the majority findings insofar as they dismissed the complaints in Nos. 27,011 and 27,445; but he dissented from the majority's findings in the title case. He agrees with Commissioner Eastman that M. P. and T. & P. interests in Seatrain are unlawful, and thinks also that Seatrain comes under the Interstate Commerce Act's definition of a railroad—that its operations "are shown upon the record to be in the nature of a car ferry." Commissioner Miller concurred with the majority except in one particular—he did not agree that a higher level of rates should be approved for application over Seatrain than over the break-bulk lines.

Commissioner Caskie dissented to the majority findings with respect to rates and charges on domestic, export and import traffic between Belle Chasse and points in portions of Southern territory. Also, he doubts that the commission has authority to compel the rail carriers to furnish cars to Seatrain, in the absence of an agreement, without providing compensation for their use. If the commission has such power, Commissioner Caskie concludes, "it is because it necessarily flows from the power to require the interchange of cars, which in turn must necessarily flow from the jurisdiction to prescribe through routes, or expressed otherwise, it is a power implied from another implied power. In my opinion if the Congress had intended to confer such broad and important powers on us, it would not have clothed its intention in obscurity and left it to be evolved by doubtful implications and disclosed by construction, but would have explicitly declared it."

Retirement Board Releases Report

(Continued from page 310)

103. Crossing and bridge flagmen and gatemen	29.00
111. Road conductors and assistants....	81.24
116. Road brakemen and flagmen....	55.78
120. Yard brakemen and yard helpers....	52.55
121. Road engineers and motormen....	85.28
125. Road firemen and helpers.....	60.49

* Combination of I. C. C. reporting divisions were made in the following instances: Division 6 includes 6 and 7; division 40 includes 38 and 40; division 42 includes 41 and 42; divisions 56 and 57 are combined; divisions 70 and 71 are coded as 70; divisions 78, 79, 80 are included in 78; division 111 includes 111, 112, 113, and 114; division 116 includes 116, 117, 118; division 121 includes 121, 122 and 123; and division 125 includes 125, 126 and 127.

Payments to pensioners will become of decreasing importance as the roll of pen-

sioners is depleted by death, says the report, while the number of annuity payments will increase for many years to come, and will shortly become the principal type of payment under the Act. Applications for annuities totaled 83,486 by November 30, 1937, and annuities had been approved for 31,442 applicants by the Board's Claims Service by that date. By December 31, 1937, the number of annuities approved by the Claims Service totaled 43,303. A peak load of applications always accompanies the establishment of a new retirement system based on credit for employment prior to the establishment of the system. The peak was accentuated in this case by the uncertainty regarding the legality of the 1935 act, the sharp reduction in the granting of new pensions by the roads under their private pension plans, and the presence of an unusually large number of employees of retirement age on the railroads.

The Board has set up, and is now currently keeping, individual accounts for more than 1,750,000 employees covered by the Railroad Retirement Act. These accounts record the monthly compensation and months of service of these employees since December 31, 1936. Increasingly with the passage of time these individual records of compensation and service months will serve as a basis for the determination of annuities. Moreover, these records provide the basis for computation of death benefits under the 1937 act. The report stated that the Board will soon send to each of these 1,750,000 railroad employees a form on which they can name the person to receive this death benefit.

All of the 176,000 railroad employees 59 years of age or over, according to the report, have been notified by the Board of the provisions of the 1937 act with regard to the election of annuities which cover the employee during his lifetime and his wife after his death, and have been given an opportunity to elect such annuities before January 1, 1938. Opportunity to elect such joint and survivor annuities, it was explained, is always available to employees covered by the Act. Since January 1, 1938, however, such an election is valid only if it is made more than 5 years before the annuity begins, or if the employee furnishes proof that he is in good health at the time he makes the election.

On the basis of its experience, the Board in its report presents certain conclusions about the effective administration of social insurance legislation. It stresses the wisdom of providing adequate time between the enactment of social insurance legislation and the date of the beginning of payments under the legislation. "Now that the need for social legislation has become generally accepted and its legality established by the highest court of the land," the report stated, "it cannot be too strongly emphasized that effective operation demands sound administrative policies; that sound administrative policies must be based upon exhaustive analysis of many complex situations; and that the whole process requires reasonable time, an adequate and competent staff, and suitable housing. Given these three elements, ad-

ministrative problems will be made much simpler."

Supplementing its annual report, the Board stated that, of the appropriations of \$146,500,000 made by Congress for annuity and pension payments for the year 1937-38, a total of \$92,000,000 had been transferred by the Treasury to the Railroad Retirement Account in monthly installments to December 31, 1937. Of this amount, \$50,000,000 had to that date been invested in 3-per cent special Treasury notes, the balance being used for benefit payments or held available for that purpose. Total tax collections under the Carriers' Taxing Act to December 31, 1937, covering the first 9 months of 1937, were \$91,722,000.

Suggests Rails Own Ship Lines

(Continued from page 309)

nedy replied that "there are three or four possibilities." He continued to point out how within the last few years some Eastern railroads have interested themselves in the shipping business; and he listed in this connection the New York Central, the Pennsylvania and the Baltimore & Ohio. It strikes Mr. Kennedy that "we are just juggling balls in the air when we say that, although such a situation as that is all right, still we are not willing to let them participate in the construction of ships—for we might get them in on some basis that would make it attractive for them to take up part of this burden."

Next Senator Copeland wanted to know if any Western railroads would be interested. And Mr. Kennedy replied that the Western roads "do have some money." He told of his recent ride "on that new train of the Union Pacific" which made him think that "if there is any possibility of making some money, they are much more hustling than the people in the East." Also, he had gone West on the "City of San Francisco" when he rode in the locomotive cab and the engineers told him that the cost of running the "San Francisco" was "less than the cost of water" to bring a standard train out there. Thus it seemed to Mr. Kennedy that "people thinking that fast could find some way of helping on the shipping problem."

Senator Johnson of California told Senator Copeland that he was unable to predict the railroad attitude toward any control of shipping rates by the Maritime Commission which might result. The Californian did suggest, however, that "you would run into the old situation of the railroad companies' owning shipping lines, and then rates would be a constant quarrel." Whereupon Mr. Kennedy said again that the idea was "merely thrown out as a suggestion"; and he held no brief "for the merits or demerits of the case." As he saw it, it was "just a suggestion for trying to save some money"—the government could go to the railroads and say "On what basis would you be willing to build ships, and how much would you build, and what would you expect to get from it, if you did?"

Equipment and Supplies

LOCOMOTIVES

Milwaukee to Ask Court for More Equipment

The Chicago, Milwaukee, St. Paul & Pacific is planning to petition the federal district court at Chicago, for permission to spend \$3,000,000 for new equipment, paying 25 per cent of the cost from the treasury and the balance through the issuance of equipment trust certificates. The program under consideration includes the construction of 55 passenger cars and 464 flat cars in company shops, when the present program of building 1,000 gondola cars is completed in April, and the purchase of four passenger locomotives.

THE MAINE CENTRAL has ordered from the Plymouth Locomotive Works, one M-L-8 type, 30-ton gasoline-mechanical locomotive of 250 hp., with 8 cylinders, 6¾ by 7 in., equipped with a LeRoy engine, for service at Lewiston, Me.

FREIGHT CARS

THE CHILE EXPLORATION COMPANY has ordered 12 dump cars of 30 cu. yd. or 70 tons' capacity, from the Differential Steel Car Company.

THE BANGOR & AROOSTOOK is inquiring for 500 box cars of 40 tons' capacity; 100 hopper cars of 70 tons' capacity and 50 rack cars of 50 tons' capacity.

PASSENGER CARS

THE CANADIAN NATIONAL has placed orders for 6 new dining cars and 10 cafe-sleeper cars, with the Canadian Car & Foundry Company, Ltd. All of the cars are to be air-conditioned, and, it is expected, will be delivered next June, in time for summer schedules. The cafe-sleeping cars, designed by the company's engineers and architects, are a departure from the usual type of equipment. Each car will consist of 8 sections, a double bedroom, smoking room and ladies' dressing room, with a cafe at one end accommodating 16 guests. The kitchen and pantry of the dining cars will be somewhat smaller than the regulation diner; they will each have accommodation for 40 persons, which is 4 more than those now in use and will be 20,000 lb. lighter than the old type, being constructed of alloy steel. Inquiry for this equipment was reported in the *Railway Age* of December 25, 1937, page 930.

SIGNALING

THE BOSTON & ALBANY has placed an order with the General Railway Signal Company, for a coded C. T. C. type machine to be installed at Webster Junction, Mass., for the control of the signaling facilities at East Brookfield, Mass., and Charlton. This machine will have 19

working levers for the control of 8 Type-5C switch machines, 2 electric locks and 22 color-light signals. There will also be 21 track indications, the most distant home signal being 17 miles distant from the control machine.

THE INTERBOROUGH RAPID TRANSIT COMPANY, New York, has placed orders with the Union Switch & Signal Company covering materials necessary for the installation of automatic block signals on its subway local tracks as follows: Broadway-Seventh Avenue line—Chambers street to 96th street, Pelham and Corona lines—138th street to Portal North of Hunts Point road, etc. These orders include 260 color light subway type signals; 260 electro-pneumatic automatic train stops; 300 alternating current relays; 1100 direct current relays; 370 relay and instrument cases; 220 track transformers, etc. The field installation of these materials is being carried out by the Interborough's forces.

Construction

BOSTON & MAINE.—A contract has been given to the Edmund J. Rappoli Company, Inc., Cambridge, Mass., at \$19,608, for the construction of a passenger station at Cambridge.

DELAWARE & HUDSON.—A revised estimate of cost, exclusive of land and property damages, of \$99,008, submitted by the railroad company, for the elimination of the Esperance station grade crossing of this road in Duanesburg, N. Y., has been approved by the New York Public Service Commission.

LONG ISLAND.—A contract has been given to Poirier & McLane Corporation, New York, for grade crossing elimination work on seven crossings at Lynbrook, N. Y. See *Railway Age* of December 11, 1937, page 856.

NEW YORK CENTRAL.—Contracts have been let by this road for work in New York City as follows: To Tully & DiNapoli, Inc., Long Island City, N. Y., for grading, placing of drainage structures and other incidental work in Riverside Park between West 90th street and St. Clair Place; to George F. Driscoll Company, Brooklyn, N. Y., for the construction of ramps between West 133 and West 136 streets, and other work of city structure No. 6, express highway; to the Harlem Contracting Company, Inc., New York, for the construction of play areas, consisting of constructing paths and paving of playgrounds, drainage and other incidental items in Riverside park.

NEW YORK, ONTARIO & WESTERN.—The New York Public Service Commission has approved an estimate of cost, exclusive of land and property damages, of \$185,200, submitted by the railroad company, for the elimination of the East Seneca street crossing of this road in Oswego, N. Y.

Supply Trade

American Brake Shoe & Foundry Co. Annual Report

The American Brake Shoe & Foundry Co., in its report for the year ended December 31, 1937, declares a consolidated net income of \$3,410,798 after all deductions and a \$1,443,222 depreciation provi-

earnings were sustained largely by the carry-over of orders from the preceding months of the year. Thus by the end of the year the backlog of orders was substantially smaller than at the beginning. In his report, W. B. Given, Jr., president, explains that should shipments continue at their present level the combined inventories will reach a minimum in February and that future purchase commitments of the company cover only current requirements. Modernization of plants, a program ini-

The American Brake Shoe and Foundry Company

(Including absorbed Ramapo Ajax Corporation)

	1937	1936
Net earnings, before depreciation and income taxes	\$5,186,390	\$3,527,925
Dividends from subsidiaries not consolidated (Note 1)	238,630	274,261
Total	5,425,020	3,802,186
Gain or (L) loss from sale or revaluation of securities (Note 1):		
U. S. Government and marketable securities	(L) 354,467	238,540
Investments in securities of other companies except subsidiaries — profit on sales	5,084	.....
Less amount thereof transferred to reserve for contingencies or applied to reduce investments (Note 1)	349,383	238,540
Depreciation and amortization	1,443,222	1,037,358
U. S. and foreign income taxes—estimated	555,000	401,360
U. S. surtax on undistributed earnings—estimated	16,000	11,500
Net income (Note 2)	3,410,798	2,351,968
Cash dividends:		
Preferred stock—\$.25 per share in 1937; \$.8334 in 1936	329,834	549,229
Common stock—\$3.40 per share in 1937; \$2.60 in 1936	2,527,625	1,590,437
Balance, transferred to earned surplus	553,339	212,302
Earned surplus, January 1	4,398,419	4,309,715
DEDUCTIONS		
Loss or (G) gain on disposal of certain fixed assets (net)	106,004	(G) 15,694
Adjustments caused by including Ramapo Ajax Corporation in consolidation	232,847	.....
Cost of minority interest acquired, in excess of book value .....	.....	139,292
Surplus, December 31 (Note 2)	\$4,612,906	\$4,398,419
Net income, after preferred dividends, per share of outstanding common stock	\$4.01	\$2.95

(1) U. S. Government and marketable securities are adjusted at the end of the year to the lower of aggregate average cost or aggregate quoted market value and gains or losses from revaluation and from sales are transferred to reserve for contingencies. Gains from sales or investments in securities of subsidiaries not consolidated and of other companies are applied to reduce the remaining investments in such companies.

The increase, since acquisition, in the equity in subsidiaries not consolidated, resulting from profits, losses and distributions, amounted to \$464,890.92 at December 31, 1937, and \$302,744.22 at December 31, 1936. The equity in the earnings, after dividends, of subsidiaries not consolidated amounted to \$55,495.70 in 1937, and \$50,584.44 in 1936.

(2) Ramapo Ajax Corporation, not consolidated in 1936 because less than 95 per cent controlled, became wholly owned in 1937 through the retirement of its preferred stock, and is therefore included in the 1937 consolidation. This change must be recognized in comparing the financial statements for the two years.

sion. This net includes operations of the Ramapo Ajax Corporation which became wholly owned during the year by the retirement of its preferred stock. This consolidated net compares with a 1936 net of \$2,351,968 (exclusive of Ramapo Ajax) and is equal, after payment of preferred dividends, to \$4.01 per share of the outstanding common stock. In 1936 the common earned \$2.95 per share.

The consolidated balance sheet as of December 31 shows total current assets of \$13,634,589 (incl. Ramapo Ajax) and total current liabilities of \$2,060,664. The report points out that until December monthly shipments of the company and its subsidiaries during 1937 were substantially in excess of those recorded during the corresponding months of 1936. The peak of shipments was reached in April. During the last quarter, manufacturing activity and

tiated in 1933, was, with minor exceptions completed in 1937. Expenditures for this program during the latter year slightly exceeded \$2,300,000. Of the 59 consolidated and controlled company plants, 55 are in operation, while 4 plants having a book value of \$613,634 are being offered for sale.

Major corporate changes made during the year include liquidation of Ramapo Ajax Corporation and assumption of its assets and liabilities by the present company; merger of the American Manganese Steel Company and the American Brake-blok Corporation with the parent company. Each of these two companies, together with the former Ramapo Ajax Corporation, are now operating separate as divisions of the American Brake Shoe & Foundry Co. Changes in the capital structure of the parent company during the

year include the reduction of par amount outstanding in the Brake Shoe company preferred stock from \$9,395,500 to \$5,488,300 through conversion to common stock, in which exchange, 78,144 shares of the latter were issued. In April of 1937 the company offered for sale its common stock at \$50 per share to common stockholders on the basis of one new share for each ten held. In this way a total of 68,920 shares were issued and a sum of \$3,446,000 realized.

The consolidated income and surplus account as of the close of 1937 and 1936 is reprinted in accompanying table.

Chicago Railway Equipment Company

The annual report of the Chicago Railway Equipment Company for 1937 showed a profit from operations after deducting manufacturing, selling and administrative expenses, of \$916,945 as compared with

and current assets as of December 31, 1937, were in excess of current liabilities in the ratio of 8.6 to 1.

"A revival of railway purchasing would lend valuable assistance to reviving industrial activity; it would at the same time affect a major division of our business. Its advent will be governed largely by two factors—the trend of traffic and the outcome of the pending rate case. That substantially higher rates will be authorized, and promptly, seems to be open to no doubt. If traffic rises materially, there will be a definite need for new equipment. Over a period of years rolling stock has declined at a faster pace than new equipment was installed, last year being no exception. For instance, although approximately 75,000 new freight cars were put into service during 1937, over 90,000 were retired, there being a small net loss in carrying capacity for the year. Both for the sake of economical operation and to

vice-president in charge of operation; **K. C. Gardner**, continues as vice-president in charge of sales; **R. A. Zimmerman** is treasurer and assistant secretary, and **John C. Bane, Jr.**, is secretary and assistant treasurer.

Moxie S. George, assistant district sales manager of the **Inland Steel Company**, with headquarters at Milwaukee, Wis., has been appointed assistant manager of sales of the flat rolled steel division, with headquarters at Chicago.

J. R. Fraine has been appointed assistant manager of sales of the **Republic Steel Corporation**, wire division for the northern territory, with headquarters at Chicago. **Carl C. Brown**, district sales manager at Birmingham, Ala., has been appointed assistant manager of sales of the wire division, with the same headquarters.

G. Reed Schreiner, assistant advertising manager of the **Carnegie-Illinois Steel Corporation**, Pittsburgh, Pa., has been appointed advertising manager, to succeed **Charles R. Moffatt**, recently appointed director of advertising of the United States Steel Corporation of Delaware. Mr. Schreiner was born at Pittsburgh, Pa., on June 16, 1895, and received his A. B. degree at the University of Pittsburgh in 1916. After serving in the United States Army during the World War, he entered the advertising department of the Carnegie Steel Company in January, 1919, and has served continuously with that department. He became assistant advertising manager in October, 1935, when the Carnegie-Illinois Steel Corporation was organized.

Allen W. Morton has been elected a vice-president of the **Koppers Company**. Mr. Morton will continue in charge of **Koppers' American Hammered Piston Ring Division**, at Baltimore, Md., where he has been general manager. He is a

	1937	1936
Profit from operations after deducting manufacturing, selling and administrative expenses	\$916,945	\$507,489
ADD:		
Interest, rentals and profit on securities	35,397	78,822
	\$952,342	\$586,311
DEDUCT — Provision for depreciation of plant and equipment	100,000	100,000
Profit for the year before providing for income taxes	852,342	486,311
Federal and state income and excess profits taxes	169,800	80,456
Profit before providing for federal surtax on undistributed profits	682,542	405,855
Federal surtax on undistributed profits	1,200	.....
Net profit for the year	681,342	405,855
Earned surplus at December 31, 1936	80,447	.....
	\$761,789	\$405,855
DEDUCT — Cash dividends paid:		
On preferred stock — present and accumulated	517,181	430,982
On common stock — \$1.00 per share	59,936	.....
Earned surplus at December 31, 1937, carried to consolidated balance sheet..	\$184,672	*\$25,127

* Deficit.

\$507,489 in 1936. The net profit for the year, after depreciation and taxes, amounted to \$681,342, from which the company paid present and accumulated preferred stock dividends and common stock dividends amounting to \$577,117. The profit for the year of \$681,342, a 14 year record, was the equivalent of \$9.83 a share on common stock.

The federal surtax on undistributed profits of \$104,224, amounted to \$1,200, or one per cent while federal and state income and excess profits taxes amounted to \$169,800, or 19 per cent of the profit after depreciation.

A. C. Moore, president, in his report to stockholders, said, "In those business channels in which we are particularly interested, shipments for railroad consumption increased 67 per cent, and in our other divisions were 25 per cent, over 1936, the output for the company as a whole gaining 49 per cent.

Substantial expenditures were made during the year in order to maintain our properties in good physical condition and to further improve our manufacturing facilities. While inventories have increased \$30,141, they are conservatively valued and average well within market prices. Working capital increased \$17,691

render adequate service, the railroads should replace much of their present equipment."

The consolidated statement of profit and loss and earned surplus for the year ending December 31, 1937, is reprinted in accompanying table.

J. W. Kearney now represents the **Davis Brake Beam Company**, Johnstown, Pa. Mr. Kearney's headquarters are at 908 Midland building, Cleveland, Ohio.

Harlan A. Pratt, eastern manager of the railroad department of the **Ingersoll-Rand Company**, New York, has resigned to become vice-president of the **Atlantic Elevator Company**, New York.

F. B. Horstmann has been appointed technical director, railroad department, of the **Dearborn Chemical Company**, Chicago, with duties to include the general supervision of all railroad department matters falling under that head.

The officers of the **Greenville Steel Car Company**, Greenville, Pa., are now as follows: **Edwin Hodge, Jr.**, of Pittsburgh, chairman and president, having succeeded as president, **Frank L. Fay**, who has resigned; **W. S. Dietrich** is



Allen W. Morton

native of Richmond, Va., and was graduated as a civil engineer from the University of Virginia in 1916. The same year he was employed by the **Bartlett Hayward Company**, Baltimore, now a division of **Koppers Company**. Later, Mr. Morton became associated with **American Hammered**. He served for two years on the general

advisory board of the American Society of Mechanical Engineers and also is a member of the Society of Automotive Engineers.

General Railway Signal Company Annual Report

The General Railway Signal Company reports for the year ended December 31, 1937, a net income of \$645,150, after pro-

duction of special apparatus required for the various new signaling systems being promoted by the company, such as centralized traffic control and simplified interlocking. Finally it is reported that the company paid its regular 6 per cent dividend on preferred stock and a \$1 dividend per share on its common. The profit and loss and surplus accounts for the year ended December 31, 1937, are reprinted in the accompanying table.

General Railway Signal Company

Profit and Loss Account For the Year Ended December 31, 1937

Gross Operating Profit, before Maintenance, Repairs and Depreciation.....		\$2,008,815
Deduct:		
Maintenance and Repairs	\$98,307	
Depreciation of Buildings, Machinery and Operating Equipment.....	174,675	
Amortization of Patents and Development	200,428	
Selling, General and Administrative Expenses	855,685	1,329,095
Net Operating Profit		679,720
Loss on Sales of Marketable Securities	30,464	
Less Appropriated from Reserve	30,464	
Interest, Dividends and Sundry Receipts (Net)		126,052
		805,772
Provision for Federal and State Income Taxes (federal surtax not assessable)		160,622
Net Income for Year		\$645,150

SURPLUS ACCOUNT

Earned Surplus:		
Earned Surplus as at December 31, 1936	\$1,328,173	
Net Income for the year ended December 31, 1937	645,150	
		1,973,323
Dividends paid, less dividends on treasury stock:		
Preferred — 6%	\$138,228	
Common — \$1.00 per share	321,030	459,258
Earned Surplus as at December 31, 1937		1,514,065
Paid-in Surplus:		
Paid-in Surplus at December 31, 1936 and 1937		1,737,751
Total Surplus, December 31, 1937		\$3,251,816

visions for depreciation and federal and state income taxes (federal surtax not assessable). This compares with a net income for 1936 of \$194,109. According to the report, the company entered the year with a satisfactory volume of orders on hand, which fact was due largely to receipt of substantial contracts late in 1936. During 1937 there was booked a volume of business 1.3 times the average for the five years ended December 31, 1936, and .7 times the bookings for 1936. Although the volume was up in the latter part of 1936 and the early months of 1937 orders fell off during the latter half of 1937. As compared with the railway equipment field in general, however, signaling purchases were relatively smaller than the average for the whole equipment industry during the "fat" months enumerated above, while during the "lean" half of 1937 the falling off in signaling purchases was less abrupt than in the equipment field as a whole.

Orders filled during 1937 were 1.64 times the average for the five years ending December 31, 1936, and 1.6 times those for 1936 itself. Unfilled orders on hand at the end of 1937 were 1.2 times the five year average and .62 times those on hand at the end of 1936.

Concerning plant facilities it is reported that a considerable amount of equipment was purchased and certain facilities rearranged during the year for the manu-

V. R. Willoughby, general mechanical engineer of the American Car & Foundry Co., has been elected to the newly created office of vice-president in charge of engineering. He will continue to exercise general supervision over the engineering department, but will devote more time to design and development work, in



V. R. Willoughby

addition to carrying on his railroad and other technical committee activities. E. D. Campbell succeeds Mr. Willoughby as general mechanical engineer, with head-

quarters at New York. W. F. Dietrichson becomes assistant general mechanical engineer in charge of engineering activities at the Berwick, Pa., plant. This position was formerly held by Mr. Campbell.

Mr. Willoughby received his college education at the University of Michigan, in the class of 1896, receiving a B.S. degree in mechanical engineering. Immediately after graduating, he went to work with the Solvay Process Company. In October, 1897, he joined the Michigan Peninsular Car Company, one of the predecessors of the American Car & Foundry Company, and two years later, served at St. Louis, Mo., as assistant to the mechanical engineer. In 1901 he was transferred to the St. Charles plant of the American Car & Foundry Co. in the department of passenger car design, and in 1905, was appointed local engineer to Jeffersonville, Ind., plant of the American Car & Foundry Co. From October, 1917, Mr. Willoughby took an active part in wartime activities of the American Car & Foundry Co., serving in the artillery and shell departments. In September, 1919, he came to the New York office in the operating



Strauss

E. D. Campbell

department; in August, 1920, he was appointed assistant general mechanical engineer and in April, 1921, acting general mechanical engineer in New York. Since January 1, 1924, he has been general mechanical engineer of the American Car & Foundry Co. and now becomes vice-president in charge of engineering. Mr. Willoughby is a member of the American Society of Mechanical Engineers, and the American Society of Testing Materials. He is the inventor of innumerable patented devices.

Mr. Campbell was educated in the Berwick, Pa., public schools and Penn State College, graduating in mechanical engineering course in the class of 1903, and in 1907, he received a master's degree of M.E. from that institution. After graduation, he served a short apprenticeship in steel car shops in the plant of the American Car & Foundry Co., at Berwick. During the years of 1905 to 1908 inclusive, he worked in the engineering department of the American Car & Foundry Co. at Berwick, and later in New York and Milton, Pa. In the fall of 1909, he went to St. Louis,

Mo., to assist the chief mechanical engineer of the American Car & Foundry Co. and continued in that office until May, 1917. During the World War, he was commissioned captain in the Engineer Officers Reserve Corps and later was assigned to the Engineering Division of the Ordnance Department in Washington. In May, 1918, he was promoted to major; in 1919 he was commissioned lieutenant-colonel in the Ordnance Reserve Corps and in 1931 was advanced to colonel. After his discharge from the army in June, 1919, Mr. Campbell returned to the American Car & Foundry Co. as assistant engineer in the New York office. In 1925 when the St. Louis plant was expanding, he went to St. Louis to organize the mechanical department. In August, 1933, he was promoted to assistant general mechanical engineer at the Berwick plant, and now becomes general mechanical engineer.

OBITUARY

Charles Augustus Ives, for many years in charge of air brake commercial and engineering activities of the General Electric Company, died on January 27, at his home in Erie, Pa. Mr. Ives was born at Racine, Wis., on August 7, 1879, and obtained his education in the public schools. He served with the Chicago, North Shore & Milwaukee, in the shops at Chicago and later was with the National Air Brake Company. In 1906 he took up his first work with the General Electric Company in the sale and servicing of air brake equipment; the following year he went to Schenectady, N. Y., for similar activity in the Railway Equipment division, transferring to the commercial department in 1908. His duties included both sales and service in connection with air brakes and air compressors. In 1914 he moved, with other members of the department, to the Erie works of the General Electric Company, where he was in charge of all commercial and engineering work on air brake equipment.

Charles Waterman Stone, consulting engineer of the General Electric Company, died at his home in Schenectady, N. Y., on February 3, at the age of 63 years. Mr. Stone was graduated from the University of Kansas in 1894, and then served consecutively with the Franklin Electric Company, Kansas City, Mo., the W. S. Hill Electric Company, New Bedford, Mass., and the Hancock Equipment Company, Boston, for a period of two years with each company. In 1900 he joined the General Electric organization in the drafting department; the following year he was in switch-gear engineering and in 1904 joined the lighting engineering department. Mr. Stone was appointed manager of the lighting department, now known as the Central Station department, in 1912. He continued in that position until 1928 when, at his own request, he was relieved of managerial responsibilities and became a consulting engineer of the company. Mr. Stone was a member of many engineering and civic clubs, a fellow of the American Institute of Electrical Engineers, and a life member of the Navy League.

Financial

BANGOR & AROOSTOOK.—Bonds.—This company has asked the Interstate Commerce Commission to modify a previous order so as to permit it to sell \$117,000 of its stamped convertible consolidated refunding mortgage four per cent bonds at minimum prices ranging from 106 and 103 per cent of par and accrued interest. The order which it is sought to have modified prohibits sale of the bonds at less than 110 and accrued interest.

BOSTON & MAINE.—Abandonment.—This road has applied to the Interstate Commerce Commission for authority to abandon its 20-mile line from Wing Road, N. H., to Base.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—Reorganization.—A protective committee representing the first and general mortgage bondholders has prepared for submission to the Interstate Commerce Commission a plan for the reorganization of this company which would eliminate the present preferred and common stock, thus doing away with the control of the road by the Southern and the Louisville & Nashville. Hearings on the reorganization of the company were resumed before the commission on February 8. The new plan provides for a total capitalization of \$43,319,833, with fixed charges of \$159,740 and contingent charges of \$1,197,334.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Reorganization.—The Interstate Commerce Commission has granted a further adjournment of hearings in the reorganization of this company until March 21.

DENVER & RIO GRANDE WESTERN.—Trustee Certificates.—Trustees of this road have applied to the Interstate Commerce Commission for authority to issue \$2,000,000 of four per cent trustee certificates of indebtedness, series F. The certificates would be payable February 2, 1939, and the proceeds would be used to meet various obligations and expenditures or to reimburse the applicant's treasury.

FORT SMITH, SUBIACO & ROCK ISLAND.—Abandonment.—The Interstate Commerce Commission, Division 4, has authorized this company to abandon the part of its line extending from Dardanelle, Ark., to Scranton, 26 miles.

ILLINOIS TERMINAL.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon a 2.39-mile line at Edwardsville, Ill., and a 2.93-mile line at Champaign.

MINERAL RANGE.—Abandonment.—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon a branch line extending from a connection with the main line of the Duluth, South Shore & Atlantic at Keweenaw Bay, Mich., to Alston, 16.1 miles.

MISSISSIPPI EXPORT.—R. F. C. Loan.—This company has applied for Interstate Commerce Commission approval of an ex-

tension of a \$37,500 note maturing April 1, which is held by the Reconstruction Finance Corporation.

NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon the part of the line extending from the north end of the Bridgeport, Conn., yard limit to a point about 300 feet south of the siding at Stepney, 7.4 miles.

NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.—Examiner Jerome K. Lyle, of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it authorize the trustees to abandon a branch line extending from Litchfield, Conn., to Hawleyville, 32.3 miles.

Abandonment.—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon a line extending from Hopkinton, Mass., to Ashland, 5.4 miles. The commission has also denied the application of the trustees to abandon that part of the line extending from Milford, Mass., to Hopkinton, 5.3 miles.

PENNSYLVANIA.—Holding of Directorships Approved.—The Interstate Commerce Commission has authorized C. Jared Ingersoll to hold the position of director of the Pennsylvania and a directorship or other office with subsidiary carriers, while holding similar positions with other railroads.

READING.—Bonds of the Perkiomen.—The Interstate Commerce Commission, Division 4, has modified its order of September 17, 1937, so as to authorize this company to sell at par and accrued interest \$285,400 of first-series mortgage bonds and \$96,000 of second-series mortgage bonds of the Perkiomen, the proceeds to be used to reimburse its treasury for expenditures made and to be made in acquiring the bonds.

ST. LOUIS-SAN FRANCISCO.—Reorganization.—Hearings in the reorganization of this company have been adjourned until May 3. Finance Director O. E. Sweet made it clear to the parties that the commission expected them to complete hearings at that time. He ordered the several bondholder committees which desire to file plans to have them before the commission by April 22.

VISALIA ELECTRIC.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon the operation of the line of the Fresno Traction Company in Fresno, Calif., and suburban territory, 17,003 ft.

Average Prices of Stocks and Bonds

	Feb. 8	Last week	Last year
Average price of 20 representative railway stocks..	28.59	29.15	56.60
Average price of 20 representative railway bonds..	62.75	62.42	84.38

THE INTERSTATE COMMERCE COMMISSION, Division 5, has approved the application of the Northland Greyhound Lines, affiliate of the Great Northern, for authority to qualify as a self-insurer under section 215 of the Motor Carrier Act.

Railway Officers

EXECUTIVE

G. W. Webster, president of the Minneapolis, St. Paul & Sault Ste. Marie, and **Joseph Chapman**, president of a public utilities concern, have been appointed co-trustees of the Soo Line by Federal Judge Gunnard Nordbye. Judge Nordbye recently granted the Soo Line's petition for reorganization under Section 77 of the federal bankruptcy act.

T. J. O'Shaughnessy has been appointed assistant, executive department, of the Chicago, Rock Island & Pacific, with headquarters at Chicago. In his new capacity, Mr. O'Shaughnessy will have such duties as may be assigned to him. He was formerly supervisor of personnel in the department of personnel and public relations, which department was discontinued following the recent death of **Hal. S. Ray**, director of personnel and public relations.

P. W. Johnston, who has been appointed assistant to the vice-president of the Erie, with headquarters at Cleveland, Ohio, as reported in the *Railway Age* of February 5, was born on July 5, 1892, at Transfer, Pa. He attended Allegheny College, Meadville, Pa., and entered the serv-



P. W. Johnston

ice of the Erie on July 1, 1909, serving as a clerk and agent at various points during vacations from school. In 1918, he was appointed station supervisor at Meadville and in the following year he was advanced to rules examiner, with the same headquarters. In 1920, Mr. Johnston was further promoted to supervisor of station service, with headquarters at Hornell, N. Y. In the following year he was appointed trainmaster at Elmira, N. Y., and in 1922, he was transferred to Hornell, being appointed chief clerk to the superintendent at Meadville in 1923. Four years later Mr. Johnston again became a trainmaster and after two years in this capacity he was promoted to assistant superintendent of transportation. In 1933, he was further advanced to superintendent of transportation, with headquarters at

Cleveland, and in 1936, he was appointed assistant general manager of the Western district, with headquarters at Youngstown. He was holding the latter position at the time of his recent appointment as assistant to the vice-president at Cleveland.

FINANCIAL, LEGAL AND ACCOUNTING

J. J. Kolk, who has been associated with the general freight claim department of the Pennsylvania at Philadelphia, Pa., has been promoted to district freight claim agent, with headquarters at Chicago, effective February 1, to succeed **Howard W. Kerns**, who, on January 16, was appointed assistant freight claim agent of the system at Philadelphia.

Martin Eckert, general auditor of the Gulf Coast Lines and the International-Great Northern, and auditor of the Houston Belt & Terminal (all units of the Missouri Pacific Lines), has been appointed general auditor of the Missouri Pacific, with headquarters at St. Louis, Mo., to succeed **Thornton M. Niven**, who has retired effective February 1, after 25 years service with this company. **C. D. Peet** has been appointed to the newly-created position of assistant to the chief accounting and financial officer.

Mr. Niven was born on September 10, 1876, at Dobbs Ferry, N. Y., and was educated at Westminster school, Simsbury, Conn. After about a year of military service as first lieutenant of the 201st infantry of the New York volunteers, Mr. Niven entered railway service in 1899 as a clerk on the Great Northern. In the following year he left this company to accept a similar position with the Erie & Wyoming Valley (now part of the Erie), and in 1901 he went with the Central of New Jersey, also as a clerk, returning to the Erie in the same capacity in 1902. From 1909 to 1911, he was associated with the Interstate Commerce Commission as an examiner of accounts, then becoming credit manager for a business concern. In 1913, Mr. Niven entered the service of the Missouri Pacific as auditor of disbursements and after five years in this capacity he was appointed assistant federal auditor of this company. In 1920, Mr. Niven was appointed general auditor of the company, holding this position continuously until his retirement.

OPERATING

W. H. Sauve, assistant superintendent on the Canadian Pacific, with headquarters at Montreal, Que., has been transferred in the same capacity to the Farnham division, with headquarters at Farnham, Que., succeeding **F. M. Donegan**, who's promotion to superintendent of the Sudbury division was noted in the *Railway Age* of February 5. **E. C. McKay**, assistant superintendent at Sudbury, Ont., has been transferred in the same capacity to the Laurentian division, succeeding Mr. Sauve.

Raymond C. Randall, who has been appointed assistant general manager of the Western district of the Erie, with headquarters at Youngstown, Ohio, as reported

in the *Railway Age* of February 5, was born at DeGraff, Ohio, on September 18, 1888. After a public school and business college education he entered railway service with the Erie on March 10, 1907, as a yard clerk at Marion, Ohio. He was promoted to assistant yardmaster at the



Raymond C. Randall

same point in April, 1912, and in 1917 he became assistant general yardmaster, being further advanced to general yardmaster at Marion in the following year. In April, 1922, he was transferred to Hammond, Ind., and in November, 1926, he was promoted to trainmaster of the Chicago division, being further advanced to assistant superintendent at Chicago two years later. In October, 1928, Mr. Randall was transferred to Jersey City as assistant superintendent of terminals, being promoted to superintendent at the same point in 1929. He was holding the latter position at the time of his recent appointment as assistant general manager at Youngstown.

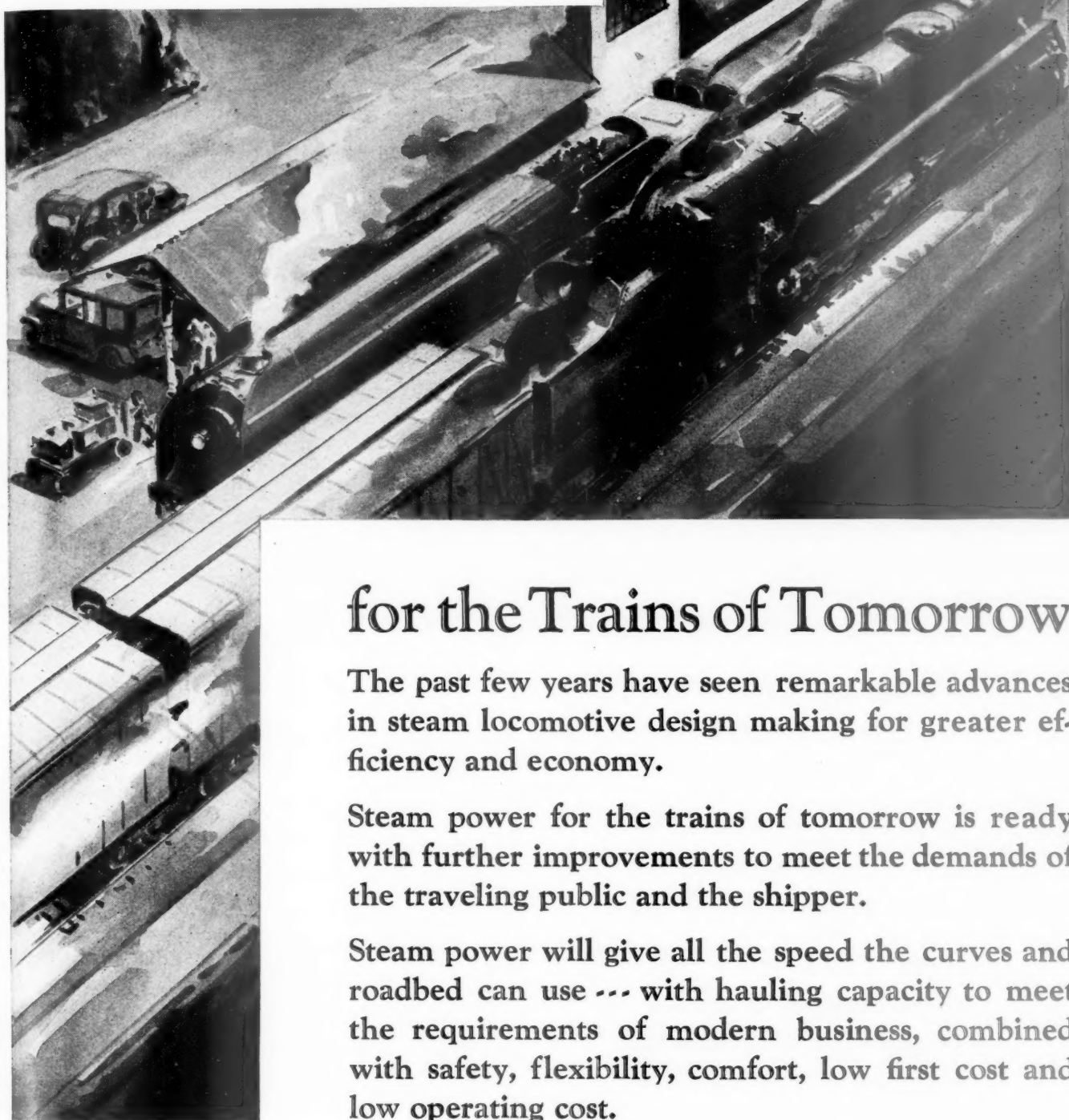
B. J. Quilty has been appointed general superintendent of the Algoma district of the Canadian Pacific at North Bay,



B. J. Quilty

Ont., as reported in the *Railway Age* of February 5. Mr. Quilty entered the service of the Canadian Pacific as brakeman for the Atlantic division on October 11, 1897, and became conductor for the St. John, N.B., section on November 19, 1904. On November 16, 1918, he was appointed assistant yardmaster at the St. John terminal. After serving in various other ca-

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capacities for short periods, Mr. Quilty was appointed assistant superintendent at Sudbury, Ont., on April 25, 1920, being transferred in the same capacity to Smith's Falls, Ont., on October 15, 1923. He served as superintendent at Schreiber, Ont., Farnham, Que., and on the Trenton division at Toronto, successively, before being appointed superintendent of the Bruce division and Toronto terminals, with headquarters at Toronto, where he remained for four years. Mr. Quilty became superintendent at Sudbury on January 1, 1937, the position he held until his appointment as general superintendent of the Algoma district, effective February 1.

S. H. Fulkerson, assistant superintendent on the Louisville & Nashville, with headquarters at Knoxville, Tenn., has been promoted to superintendent of the Knoxville and Atlanta division, with the same headquarters, to succeed **R. C. Morrison**, who has been assigned to other duties.

TRAFFIC

J. T. Grant has been appointed general agent, traffic department, New York, Chicago & St. Louis, with headquarters at New York, succeeding **M. M. Clement**, who has been appointed acting general agent at Philadelphia, Pa., as noted in the *Railway Age* of January 29.

T. A. Morgan, traveling freight and passenger agent for the Chicago, Milwaukee, St. Paul & Pacific at Philadelphia, Pa., has been appointed general agent at Boston, Mass., to succeed **H. Sengstacken**, whose appointment as general passenger agent at Chicago was reported in the *Railway Age* of January 29.

K. S. Boreman, division freight agent for the New York, Chicago & St. Louis, with headquarters at St. Louis, Mo., has been appointed assistant general agent, with headquarters at Kansas City, Mo., effective March 1, to succeed **Wallace A. McGowan**, who will retire from active service on that date.

Herbert W. Bondurant, assistant freight traffic manager of the Southern



Herbert W. Bondurant

at Atlanta, Ga., who has been appointed freight traffic manager, with headquarters

at Cincinnati, Ohio, as reported in the *Railway Age* of February 5, is a native of Tennessee. He entered the service of the Southern at Nashville, Tenn., in 1912, and advanced through various capacities at Philadelphia, Pa., Memphis, Tenn., and Nashville, Little Rock, Ark., and Dallas, Tex. Eventually he was appointed division freight agent at Charlotte, N. C., and still later he became assistant freight traffic manager at the same point. For the last three years he had served as assistant freight traffic manager at Atlanta.

ENGINEERING AND SIGNALING

Anton Anderson, engineer maintenance of way of the Chicago, Indianapolis & Louisville, with headquarters at Lafayette, Ind., has been promoted to chief engineer, effective February 1, with the same headquarters, and the position of engineer maintenance of way has been abolished. Mr. Anderson succeeds **A. S. Kent**, chief engineer, with headquarters at Chicago, who has retired. **E. M. Graham**, principal assistant engineer, will soon move his headquarters from Chicago to Lafayette.

James V. Johnston, whose appointment as principal assistant engineer of the



James V. Johnston

Mobile & Ohio, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of January 1, was born on September 4, 1890, at Coldwater, Miss. After attending Mississippi Agricultural and Mechanical College (now Mississippi State College), Mr. Johnston entered railway service on February 1, 1912, as an instrumentman on a predecessor line of the Gulf, Mobile & Northern. On May 1, 1913, he left this company to become city engineer of Laurel, Miss., returning to railway service on September 1, 1914, as land engineer on a valuation survey of the Mobile & Ohio. During the war he served with the United States Army from May 15, 1917, to July, 1919, as a first lieutenant and later as captain, corps of engineers. Following the war, he returned to the service of the M. & O. as a draftsman, holding this position until March 1, 1920, when he was appointed assistant to the bridge engineer of the same company. On October 1, 1920, he was promoted to di-

vision engineer, which position he held continuously until his recent appointment as principal assistant engineer.

PURCHASES AND STORES

C. R. Holmes has been appointed storekeeper of the Coast lines of the Atchison, Topeka & Santa Fe, with headquarters at San Bernardino, Cal., succeeding **K. R. Stewart**, who has retired after 55 years continuous service with the Santa Fe.

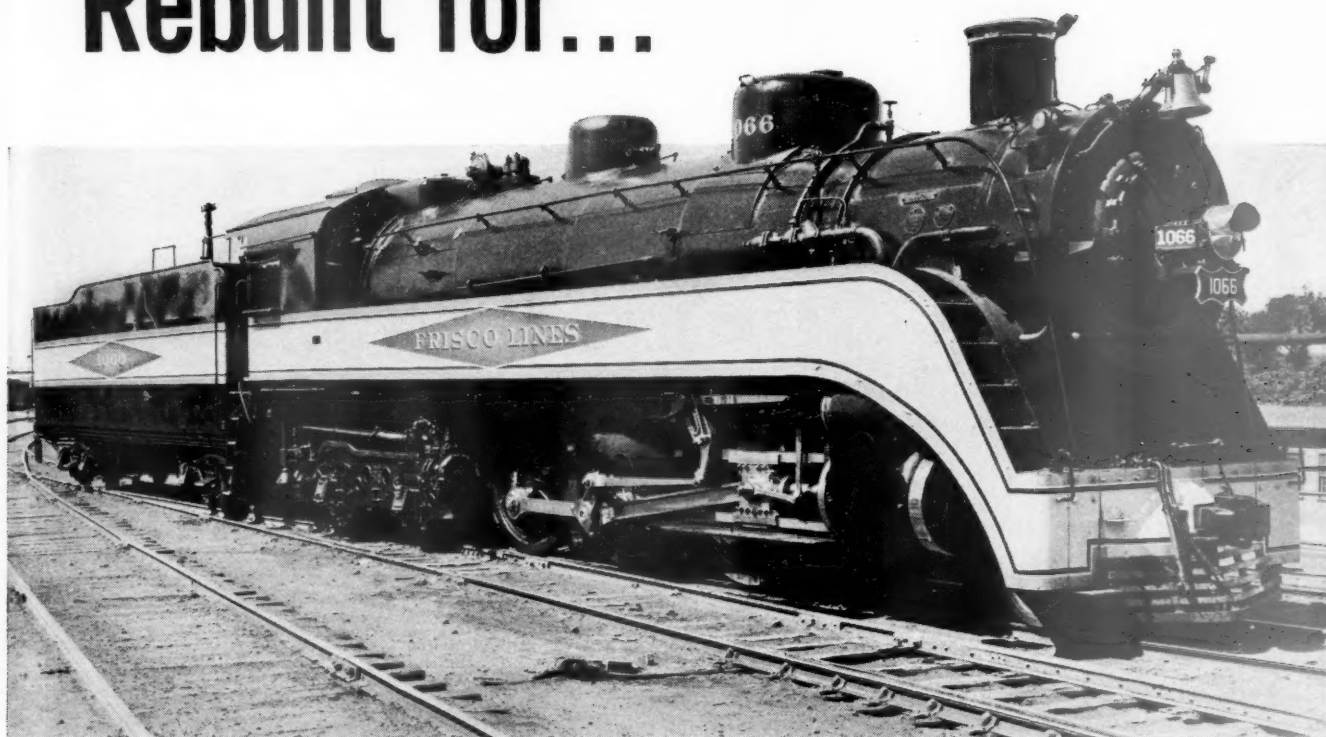
OBITUARY

H. Rhoads, division engineer on the Illinois Central, with headquarters at Waterloo, Iowa, died suddenly on February 6 at Dubuque, Iowa.

Julius H. Goos, formerly inspecting engineer of track for the Great Northern, died suddenly at his home in St. Paul, Minn., on February 1 as a result of a stroke. Mr. Goos was born at Kappeln, Germany, on October 22, 1882, and came to this country as a young boy with his parents, who settled in Gladbrook, Iowa. Following his graduation from the Gladbrook high school he attended Iowa State College. He worked for a short time for his father and for other concerns after leaving school, and entered the service of the Great Northern on April 1, 1903, as a topographer in a survey party running lines to Thief River Falls, Minn. In June, 1904, he became a draftsman in the office of the district engineer at Superior, Wis., and advanced successively through the positions of assistant engineer and rail inspector to become inspecting engineer of track on January 1, 1912. This position he held until his retirement because of ill health on March 31, 1934.

D. J. Bond, who retired in 1936 as comptroller of the Minneapolis, St. Paul & Sault Ste. Marie, the Duluth, South Shore & Atlantic and the Mineral Range, died on January 26 at his home at Minneapolis, Minn. A native of Taylorville, Ill., Mr. Bond was born on December 14, 1878, and attended the University of Illinois. He first entered railway service in 1905 with the Chicago, Rock Island & Pacific, serving in various clerical capacities until 1910, when he went with the Gulf, Colorado & Santa Fe as chief bill clerk in the auditor's office at Galveston, Tex. Later he served as a bookkeeper and statistician with this company, resigning in 1911 to become traveling accountant of the Trinity & Brazos Valley (now part of the Burlington-Rock Island). Next he served successively in accounting capacities with the St. Louis, Brownsville & Mexico, the International-Great Northern (both units of the Missouri Pacific Lines), leaving the latter company in 1914 to go with the Interstate Commerce Commission as an accountant and examiner for the Bureau of Valuation at Kansas City, Mo. He first entered the service of the Soo Line in 1918 as chief clerk to the comptroller at Minneapolis. Two years later he was promoted to assistant comptroller and in 1922 he became comptroller.

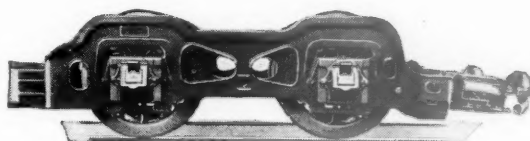
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speeds up to 18 miles per hour over the ruling grade. » » » As modernized, this power has high capacity needed for starting, for rapid acceleration to road speeds and for handling trains over the ruling grade. » » » This factor together with high capacity at high road speeds enables it to handle successfully and economically modern high-speed passenger trains with pleasing results that increase the good-will.



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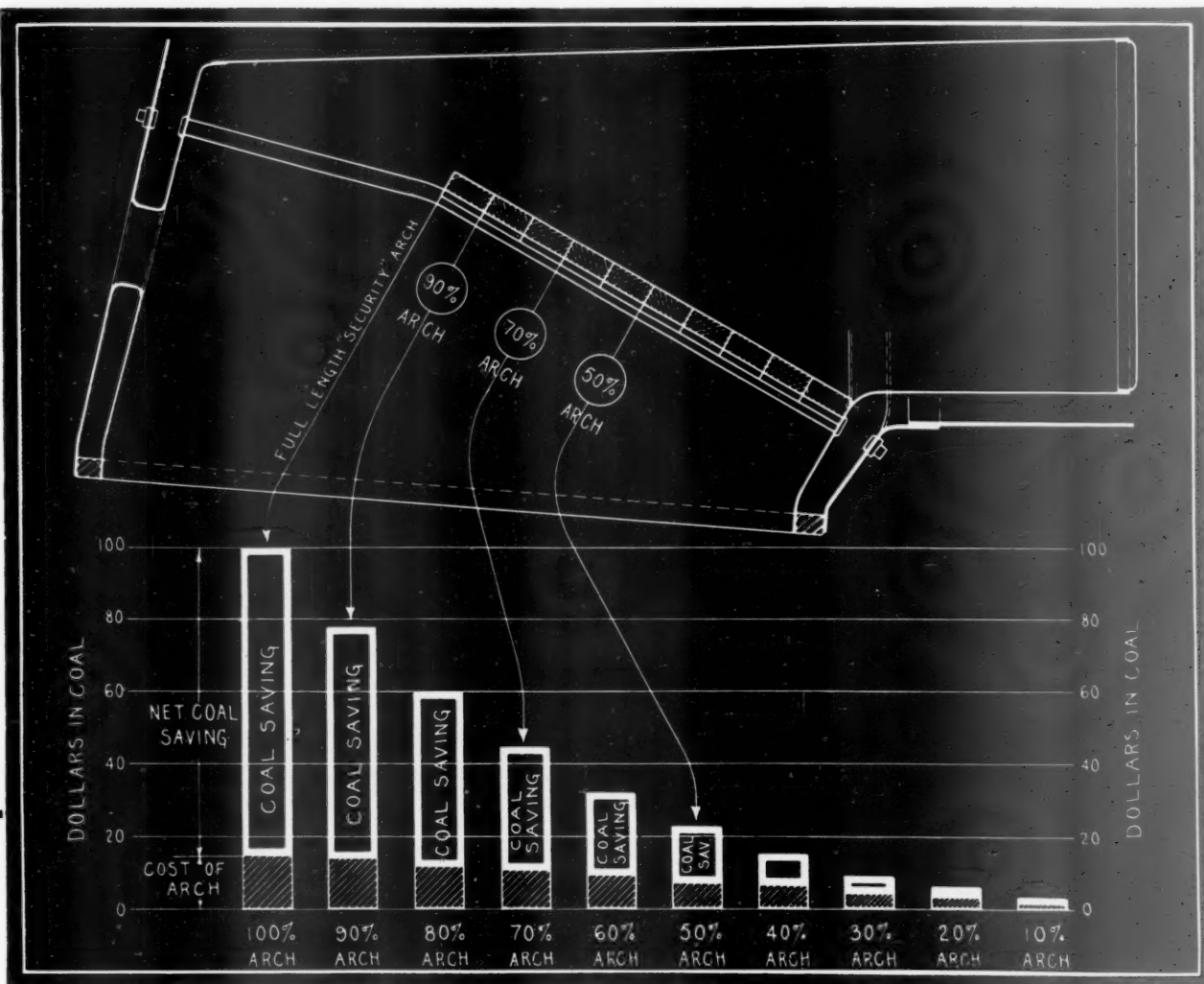
REVENUES AND EXPENSES OF RAILWAYS

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1937

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Traffic	Trans- portation			Operating income	After depreciation 1937
Akron, Canton & Youngstown.....	Dec. 171	\$131,416	\$62	\$131,478	\$26,268	\$11,195	\$59,245	91.8	\$11,183	\$23,778	\$7,382
Alton.....	12 mos. 171	2,001,668	563	2,002,231	325,466	124,402	679,906	68.8	662,707	557,237	\$47,069
Alton.....	12 mos. 956	890,790	271,204	1,161,994	213,065	53,740	589,916	75.6	336,268	166,348	6,685
Alton.....	12 mos. 956	12,031,044	2,481,357	14,512,401	2,304,056	606,593	6,575,714	76.5	3,971,158	2,843,703	712,057
Atchison, Topeka & Santa Fe System.....	Dec. 13,538	9,998,593	1,446,530	12,445,123	1,774,130	503,035	5,541,293	89.8	1,323,387	136,422	118,363
Atlanta & West Point.....	12 mos. 13,510	138,984,819	17,526,621	156,511,440	27,282,945	5,462,819	62,336,123	82.0	30,768,205	17,077,111	18,301,904
Atlanta & West Point.....	12 mos. 93	73,486	25,956	99,442	17,631	8,509	28,839	107.0	8,935	25,298	40,948
Atlanta & West Point.....	12 mos. 93	1,185,827	310,995	1,496,822	230,404	104,088	781,644	89.2	192,506	89,349	78,583
Western of Alabama.....	Dec. 133	77,186	26,759	103,945	18,987	7,622	60,447	103.3	4,163	14,120	7,582
Atlanta, Birmingham & Coast.....	12 mos. 133	1,149,962	308,643	1,458,605	234,487	93,611	649,347	89.5	175,746	43,080	77,573
Atlanta, Birmingham & Coast.....	12 mos. 639	267,059	127,718	394,777	57,696	25,253	121,245	105.9	153,611	39,860	59,058
Atlanta, Birmingham & Coast.....	12 mos. 639	3,076,059	192,978	3,269,037	611,939	291,060	1,434,173	90.5	347,698	84,846	14,664
Atlantic Coast Line.....	Dec. 5,105	2,717,468	609,439	3,326,907	517,460	193,840	1,643,747	86.2	335,607	237,605	75,741
Atlantic Coast Line.....	12 mos. 5,102	34,890,819	7,789,061	42,679,880	4,941,670	1,755,554	18,631,096	76.8	11,139,379	6,314,379	4,938,774
Atlantic Coast Line.....	12 mos. 342	187,293	1,222	188,515	23,312	7,785	74,270	79.0	40,484	33,884	34,175
Atlantic Coast Line.....	12 mos. 342	2,445,149	14,558	2,459,707	316,069	86,783	827,324	68.7	787,869	549,869	496,719
Baltimore & Ohio.....	Dec. 6,446	9,806,035	1,081,678	10,887,713	972,623	402,251	4,913,864	84.6	1,810,842	1,016,358	701,976
Baltimore & Ohio.....	12 mos. 6,460	147,212,330	11,918,661	159,130,991	16,947,206	4,950,084	61,153,718	76.1	40,576,920	29,658,366	24,908,625
Baltimore & Ohio.....	12 mos. 23	49,253	66,785	116,038	14,477	1,019	87,377	102.4	3,297	53,779	38,770
Baltimore & Ohio.....	12 mos. 23	596,898	841,177	1,438,075	152,643	17,616	997,270	101.1	16,466	328,223	400,880
Bangor & Aroostook.....	Dec. 603	512,613	23,500	536,113	87,969	6,930	150,610	62.2	211,882	166,058	157,149
Bangor & Aroostook.....	12 mos. 603	5,707,539	231,175	5,938,714	1,082,048	69,333	1,533,315	66.3	1,537,410	1,511,650	1,433,681
Bangor & Aroostook.....	12 mos. 225	305,265	817	306,082	282,248	14,141	154,929	187.6	273,525	290,212	238,364
Bangor & Aroostook.....	12 mos. 225	17,423,701	9,466	17,433,167	1,587,634	153,539	2,739,809	48.3	9,086,401	7,064,993	7,680,668
Boston & Maine.....	Dec. 1,959	2,178,540	642,506	2,821,046	562,078	66,367	1,568,896	83.2	575,660	1,020,600	831,643
Boston & Maine.....	12 mos. 1,960	32,238,672	7,901,697	40,140,369	7,238,608	803,088	18,267,771	74.7	11,758,369	8,904,468	6,548,869
Boston & Maine.....	12 mos. 255	82,520	19,741	102,261	34,187	4,666	38,592	115.4	16,839	22,372	11,356
Boston & Maine.....	12 mos. 255	1,079,871	198,872	1,278,743	212,380	57,879	619,947	88.3	161,496	90,343	104,693
Burlington, Rock Island.....	Dec. 37	107,984	.....	107,984	38,463	440	12,251	57.50	45,935	11,951	77,931
Burlington, Rock Island.....	12 mos. 37	1,298,258	1,299,528	2,597,786	495,664	4,771	135,303	61.25	503,571	95,957	919,598
Burlington, Rock Island.....	12 mos. 233	267,294	18,217	285,511	53,976	9,464	126,193	73.3	79,966	68,596	39,424
Burlington, Rock Island.....	12 mos. 233	2,076,928	181,104	2,258,032	406,048	115,252	904,976	83.9	388,224	282,781	49,412
Cambria & Indiana.....	Dec. 37	107,984	.....	107,984	38,463	440	12,251	57.50	45,935	11,951	77,931
Cambria & Indiana.....	12 mos. 37	1,298,258	1,299,528	2,597,786	495,664	4,771	135,303	61.25	503,571	95,957	919,598
Cambria & Indiana.....	12 mos. 233	267,294	18,217	285,511	53,976	9,464	126,193	73.3	79,966	68,596	39,424
Cambria & Indiana.....	12 mos. 233	2,076,928	181,104	2,258,032	406,048	115,252	904,976	83.9	388,224	282,781	49,412
Canadian Pacific Lines in Vermont.....	Dec. 85	72,442	8,523	80,965	11,370	18,889	57,221	101.5	1,385	4,544	27,103
Canadian Pacific Lines in Vermont.....	12 mos. 85	848,963	117,926	966,889	166,858	51,227	702,724	111.7	13,261	186,517	45,441
Canadian Pacific Lines in Vermont.....	12 mos. 1,926	865,888	132,521	998,409	127,631	52,326	567,619	93.5	76,499	109,083	64,566
Canadian Pacific Lines in Vermont.....	12 mos. 1,926	13,215,298	1,503,768	14,719,066	2,259,918	661,871	6,945,370	86.9	2,165,334	1,112,332	854,911
Central of New Jersey.....	Dec. 706	2,013,408	362,752	2,376,160	537,213	50,787	1,207,139	80.9	496,175	109,402	58,362
Central of New Jersey.....	12 mos. 682	25,581,638	4,693,696	30,275,334	5,947,541	573,108	13,615,467	73.4	8,650,138	4,025,613	2,147,765
Central of New Jersey.....	12 mos. 455	355,839	38,387	394,226	90,538	14,962	236,427	100.0	150	13,682	53,964
Central of New Jersey.....	12 mos. 455	5,243,989	466,971	5,710,960	886,140	184,493	2,921,446	87.1	806,097	568,020	119,672
Chesapeake & Ohio.....	Dec. 3,104	8,209,577	321,900	8,531,477	1,721,550	217,241	2,347,640	63.1	3,264,411	2,971,136	3,079,610
Chesapeake & Ohio.....	12 mos. 3,106	118,956,953	3,572,176	122,529,129	13,446,768	2,327,391	29,890,500	57.0	54,817,540	42,027,255	42,614,449
Chesapeake & Ohio.....	12 mos. 926	998,232	171,433	1,169,665	228,870	53,265	1,007,274	75.2	331,638	231,638	89,590
Chesapeake & Ohio.....	12 mos. 926	12,877,899	1,588,571	14,466,470	1,948,652	695,379	6,297,851	76.5	3,851,597	2,956,597	1,336,582
Chicago & Eastern Illinois.....	Dec. 130	318,571	1,461	320,032	35,469	26,182	99,680	80.7	63,279	101,641	95,998
Chicago & Eastern Illinois.....	12 mos. 130	3,780,210	14,651	3,794,861	445,175	218,492	1,022,042	69.1	1,205,057	928,655	870,043
Chicago & Eastern Illinois.....	12 mos. 8,390	47,166,812	1,153,875	48,320,687	5,081,812	192,329	11,554,073	91.9	5,444,996	4,251,765	37,401
Chicago & Eastern Illinois.....	12 mos. 8,399	68,692,622	11,945,922	80,638,544	8,814,577	2,295,290	37,141,944	90.6	8,448,404	2,451,765	5,260,641
Chicago, Burlington & Quincy.....	Dec. 8,969	6,039,695	875,717	6,915,412	596,869	247,575	3,069,192	67.7	2,556,327	1,783,318	1,493,066
Chicago, Burlington & Quincy.....	12 mos. 8,975	79,966,473	9,717,844	89,684,317	14,033,990	2,911,791	36,183,417	74.2	25,873,207	18,141,741	13,326,497
Chicago, Burlington & Quincy.....	12 mos. 1,505	1,320,119	55,166	1,375,285	179,049	60,566	629,030	73.2	398,809	347,196	144,639
Chicago, Burlington & Quincy.....	12 mos. 1,505	16,922,665	565,194	17,487,859	2,852,227	715,087	7,232,995	76.2	4,448,861	3,357,895	862,928
Chicago Great Western.....	Dec. 573	623,106	67,800	690,906	86,759	30,110	329,205	87.8	93,571	53,501	35,707
Chicago Great Western.....	12 mos. 575	8,314,311	645,867	8,960,178	1,135,840	356,129	4,111,305	85.9	1,413,110	1,014,298	119,087
Chicago, Indianapolis & Louisville.....	Dec. 573	623,106	67,800	690,906	86,759	30,110	329,205	87.8	93,571	53,501	35,707
Chicago, Indianapolis & Louisville.....	12 mos. 575	8,314,311	645,867	8,960,178	1,135,840	356,129	4,111,305	85.9	1,413,110	1,014,298	119,087

Continued on next left-hand page

Follow Thru On Economies



The Effect of Abbreviated Arches on Fuel Saving

Apparent economies of the moment may turn into a net loss when followed thru to their conclusion. " " " It may seem like saving money to cut down on the locomotive Arch or to skimp on Arch Brick. But every dollar thus "saved" costs ten in extra fuel. " " " This has been demonstrated repeatedly by tests on several roads involving various types of locomotives. " " " Economy is essential but it should be true economy that results in the greatest net return to the treasury. This calls for a 100% Arch on every locomotive.

There's More To SECURITY ARCHES Than Just Brick

**HARBISON-WALKER
REFRACTORIES CO.**

Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**

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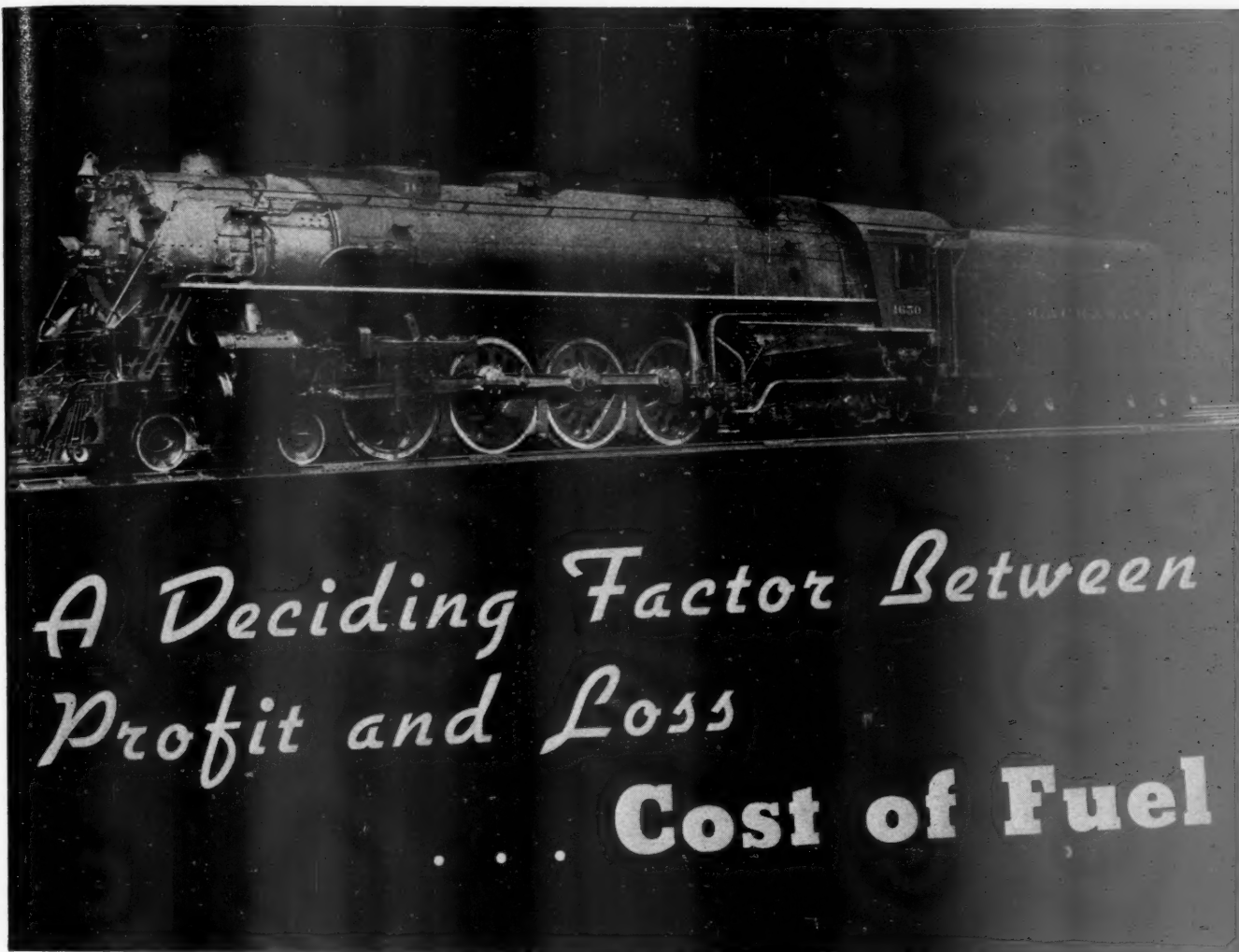
*Locomotive Combustion
Specialists*

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1937—CONTINUED

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1937—CONTINUED															
Av. mileage operated during period	Name of road	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Net railway operating income					
		Freight	Passenger (inc. misc.)	Total	Maintenance of way and structures	Equip. ment	Traffic			Trans- portation	Total	Operating income	After depreciation—1937	Before de- preciation	
11.024	Chicago, Rock Island & Pacific.....Dec. 12 mos.	\$6,515,944	\$8,488,113	\$14,999,057	\$1,178,700	\$1,582,816	\$233,845	\$3,556,929	\$6,940,370	84.0	\$1,326,312	\$701,312	\$383,163	\$1,482,104	\$849,431
11.096	Chicago, Milw., St. Paul & Pacific.....Dec. 12 mos.	88,376,457	8,283,704	107,662,276	17,370,183	20,227,129	2,708,338	41,985,006	87,137,444	80.9	20,524,832	13,763,477	8,790,661	9,461,358	14,270,498
7.511	Chicago, Rock Island & Pacific.....Dec. 12 mos.	4,461,232	808,572	5,269,804	572,377	1,207,689	241,918	2,736,015	5,147,102	88.1	693,338	532,887	295,872	793,867	642,985
7.518	Chicago, Rock Island & Pacific.....Dec. 12 mos.	62,629,490	7,802,144	70,431,634	11,453,557	15,195,870	2,765,906	31,801,583	65,227,136	84.9	11,634,080	7,481,716	3,927,187	657,436	8,024,930
626	Chicago, Rock Island & Gulf.....Dec. 12 mos.	262,174	27,974	290,148	45,730	8,640	19,719	146,065	228,124	56.4	176,428	177,584	119,229	71,980	122,460
626	Chicago, Rock Island & Gulf.....Dec. 12 mos.	3,172,685	380,589	3,553,274	642,335	422,214	224,845	1,676,557	3,283,666	68.7	1,498,369	1,315,911	531,520	343,244	573,919
1,648	Chicago, St. Paul, Minneap. & Omaha, Dec. 12 mos.	1,273,711	162,999	1,436,710	130,814	288,645	40,833	761,700	1,294,727	83.6	254,739	144,920	21,003	38,916	418,648
1,648	Chicago, St. Paul, Minneap. & Omaha, Dec. 12 mos.	15,236,219	1,700,302	16,936,521	2,453,585	3,527,876	446,593	8,634,917	15,948,489	87.7	2,229,626	1,189,523	171,546	427,646	1,418,648
308	Clinchfield Railroad.....Dec. 12 mos.	504,578	5,997	510,575	28,992	89,466	19,081	119,208	271,828	52.6	245,131	224,224	263,096	209,338	301,939
308	Clinchfield Railroad.....Dec. 12 mos.	6,751,705	65,539	6,817,244	512,482	1,368,784	24,505	1,351,374	3,638,982	52.9	3,241,027	2,773,107	3,207,138	2,575,949	3,648,897
796	Colorado & Southern.....Dec. 12 mos.	392,883	47,566	440,449	63,142	138,110	15,522	253,109	499,717	59.0	5,125	88,730	60,690	90,932	29,728
837	Colorado & Southern.....Dec. 12 mos.	6,543,548	467,992	7,011,540	839,587	1,535,380	171,206	3,053,250	5,974,777	77.6	1,726,373	903,584	675,992	598,589	1,050,637
902	Fort Worth & Denver City.....Dec. 12 mos.	578,958	58,024	636,982	59,511	102,013	17,716	202,990	418,031	67.5	201,710	170,246	133,150	172,879	151,111
902	Fort Worth & Denver City.....Dec. 12 mos.	6,910,911	677,553	7,588,464	646,200	1,111,814	218,585	2,263,413	4,656,817	62.9	2,747,942	2,390,274	1,880,879	1,211,572	2,086,146
167	Columbus & Greenville.....Dec. 12 mos.	1,114,700	107,130	1,221,830	312,849	181,702	52,543	479,163	1,155,107	103.1	146,001	21,780	22,501	109,895	23,127
830	Delaware & Hudson.....Dec. 12 mos.	1,714,529	105,529	1,820,058	223,993	509,224	46,736	848,031	1,742,059	91.5	161,504	61,304	66,284	478,236	154,196
830	Delaware & Hudson.....Dec. 12 mos.	2,944,133	1,208,233	4,152,366	3,378,253	6,151,400	543,911	9,334,607	20,863,093	82.7	4,356,735	2,923,109	2,815,198	3,163,583	3,872,023
985	Delaware, Lackawanna & Western.....Dec. 12 mos.	2,785,682	3,921,820	6,707,502	748,571	1,389,848	118,699	2,017,054	3,309,848	78.4	611,972	240,677	196,106	81,126	403,121
985	Delaware, Lackawanna & Western.....Dec. 12 mos.	37,305,165	7,081,660	44,386,825	4,007,178	9,058,747	1,390,890	22,971,684	39,279,811	84.3	10,895,193	5,833,898	5,628,901	6,362,518	8,136,375
2,569	Denver & Rio Grande Western.....Dec. 12 mos.	1,692,211	109,197	1,801,408	76,085	578,672	62,263	883,735	1,672,203	87.4	240,682	476,688	57,823	132,657	40,200
2,575	Denver & Rio Grande Western.....Dec. 12 mos.	23,845,818	1,596,035	25,441,853	4,757,720	7,785,324	744,533	10,129,391	24,125,717	90.1	2,656,275	130,803	178,792	175,355	187,847
232	Denver & Salt Lake.....Dec. 12 mos.	294,251	8,921	303,172	1,792	624,084	2,452	101,770	155,722	49.5	784,103	466,826	930,160	1,030,782	1,030,782
232	Denver & Salt Lake.....Dec. 12 mos.	2,602,325	84,941	2,687,266	461,186	285,602	29,219	810,801	2,022,153	72.1	8,047	190,801	155,666	130,742	102,287
242	Detroit & Mackinac.....Dec. 12 mos.	30,742	3,553	34,295	8,836	11,293	869	24,618	48,796	119.7	8,047	190,801	155,666	130,742	102,287
242	Detroit & Mackinac.....Dec. 12 mos.	768,055	38,500	806,555	143,950	184,640	11,415	313,699	694,644	78.5	161,137	133,094	79,696	139,344	148,801
50	Detroit & Toledo Shore Line.....Dec. 12 mos.	303,447	.....	303,447	19,613	22,128	9,201	90,942	149,288	48.1	2,084,421	1,701,711	1,076,002	1,131,537	1,148,801
50	Detroit & Toledo Shore Line.....Dec. 12 mos.	3,793,164	.....	3,793,164	285,602	281,751	98,585	965,029	1,730,586	45.4	8,047	190,801	155,666	130,742	102,287
472	Detroit, Toledo & Iron Range.....Dec. 12 mos.	556,420	270	557,190	45,130	89,193	11,770	146,432	313,695	53.5	272,154	279,796	250,262	372,328	279,503
472	Detroit, Toledo & Iron Range.....Dec. 12 mos.	7,165,055	3,300	7,168,355	872,339	1,029,781	139,517	1,682,932	3,967,462	52.8	3,535,784	2,945,082	2,348,112	2,791,754	2,617,703
539	Duluth, Missabe & Iron Range.....Dec. 12 mos.	160,365	29,260	189,625	266,007	255,482	6,059	172,494	728,819	385.3	16,374,067	12,730,943	12,721,781	8,694,801	13,550,383
538	Duluth, Missabe & Iron Range.....Dec. 12 mos.	23,243,184	29,260	23,272,444	2,325,211	3,114,775	49,688	4,434,782	10,381,999	38.8	16,374,067	12,730,943	12,721,781	8,694,801	13,550,383
178	Duluth, Winnipeg & Pacific.....Dec. 12 mos.	126,368	1,813	128,181	17,587	16,182	3,903	54,000	95,605	73.0	35,418	30,766	17,809	12,497	20,563
178	Duluth, Winnipeg & Pacific.....Dec. 12 mos.	1,359,338	23,278	1,382,616	277,367	224,957	26,636	581,148	1,159,766	81.6	261,855	177,268	155,533	181,815	37,370
434	Elgin, Joliet & Eastern.....Dec. 12 mos.	815,493	10	815,503	115,490	234,672	15,224	473,275	877,235	96.6	30,426	136,870	466,630	4,639,460	4,639,460
434	Elgin, Joliet & Eastern.....Dec. 12 mos.	18,705,878	189	18,706,067	1,914,603	4,461,765	175,695	7,868,334	14,919,847	69.9	6,420,341	5,011,655	3,723,271	4,080,304	4,639,460
2,275	Erie.....Dec. 12 mos.	4,768,552	461,959	5,230,511	503,125	1,304,951	185,848	2,651,524	4,922,901	86.3	783,396	206,886	45,214	1,271,121	360,986
2,280	Erie.....Dec. 12 mos.	72,080,573	5,325,104	77,405,677	7,182,472	16,643,360	2,109,351	31,703,600	60,997,804	72.7	22,927,922	17,411,342	13,614,008	16,338,790	17,419,961
45	New Jersey & New York.....Dec. 12 mos.	14,390	45,012	59,402	594	14,206	477	51,514	68,204	108.9	5,570	12,995	28,090	54,400	346,166
45	New Jersey & New York.....Dec. 12 mos.	179,072	533,818	712,890	59,468	178,638	6,461,765	7,868,334	14,919,847	112.7	94,485	169,647	346,304	346,184	346,166
143	New York, Susq. & Western.....Dec. 12 mos.	228,198	23,889	252,087	14,760	24,200	3,659	118,248	172,022	64.8	93,407	59,085	30,211	15,276	35,620
143	New York, Susq. & Western.....Dec. 12 mos.	2,796,741	283,259	3,080,000	346,160	346,160	47,143	1,361,980	2,162,687	66.9	1,072,249	724,644	368,297	382,102	433,634
684	Florida East Coast.....Dec. 12 mos.	5,558,444	2,716,171	8,274,615	1,216,090	1,824,426	271,494	3,177,842	7,123,303	76.6	2,179,903	1,278,743	741,578	877,796	1,207,394
329	Georgia Railroad.....Dec. 12 mos.	209,485	16,006	225,491	43,800	62,003	22,978	123,721	268,222	105.3	13,434	29,324	4,949	43,048	5,552
329	Georgia Railroad.....Dec. 12 mos.	3,170,192	183,888	3,354,080	486,880	712,330	233,252	1,570,267	3,174,198	86.4	500,693	397,404	522,002	676,175	651,008
407	Georgia & Florida.....Dec. 12 mos.	75,135	3,134	78,269	17,892	13,848	7,891	37,959	85,272	103.7	3,027	6,040	7,609	1,957	3,216
407	Georgia & Florida.....Dec. 12 mos.	1,210,934	31,922	1,242,856	284,667	224,489	103,305	473,567	1,155,753	89.5	135,448	62,291	34,875	13,859	95,869
1,032	Grand Trunk Western.....Dec. 12 mos.	1,513,112	105,835	1,618,947	211,026	352,360	72,405	851,250	1,559,193	87.4	224,886	206,817	107,496	335,717	196,983
1,032	Grand Trunk Western.....Dec. 12 mos.	21,357,038	1,095,316	22,452,354	2,917,240	4,571,339	505,738	10,034,579	19,034,579	78.3	5,272,519	4,165,231	2,422,752	2,670,053	3,485,677
172	Canadian Nat'l Lines in New Eng.....Dec. 12 mos.	728,680	88,005	816,685	1,169	18,526	3,573	58,435	1,492,762	103.7	7,433	4,917	30,692	55,885	72,593
172	Canadian Nat'l Lines in New Eng.....Dec. 12 mos.	1,228,680	88,005	1,316,685	344,858	269,796	31,046	768,219	1,492,762	103.7	53,629	204,936	562,690	660,070	528,599
8,070	Great Northern.....Dec. 12 mos.	4,189,020	486,995	4,676,015	489,892	985,833	188,671	2,359,771	4,330,876	81.4	990,173	481,636	357,388	1,261,515	668,195
8,087	Great Northern.....Dec. 12 mos.	81,560,214	5,081,691	86,641,905	94,942,292	14,927,846	2,282,051	30,709,734	61,377,723	64.6	33,564,569	25,139,406	23,559,571	27,426,363	27,426,363

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A Modern Passenger and Fast Freight Locomotive Equipped With an Elesco Exhaust Steam Injector

The Elesco exhaust steam injector materially decreases this cost by effecting a fuel and water economy of 8%–12% . . . or providing an equivalent increase in the evaporating capacity of the locomotive.

It is automatic and stable in operation and has an operating range up to 300 lb. pressure and 105 deg. F.

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A-1205

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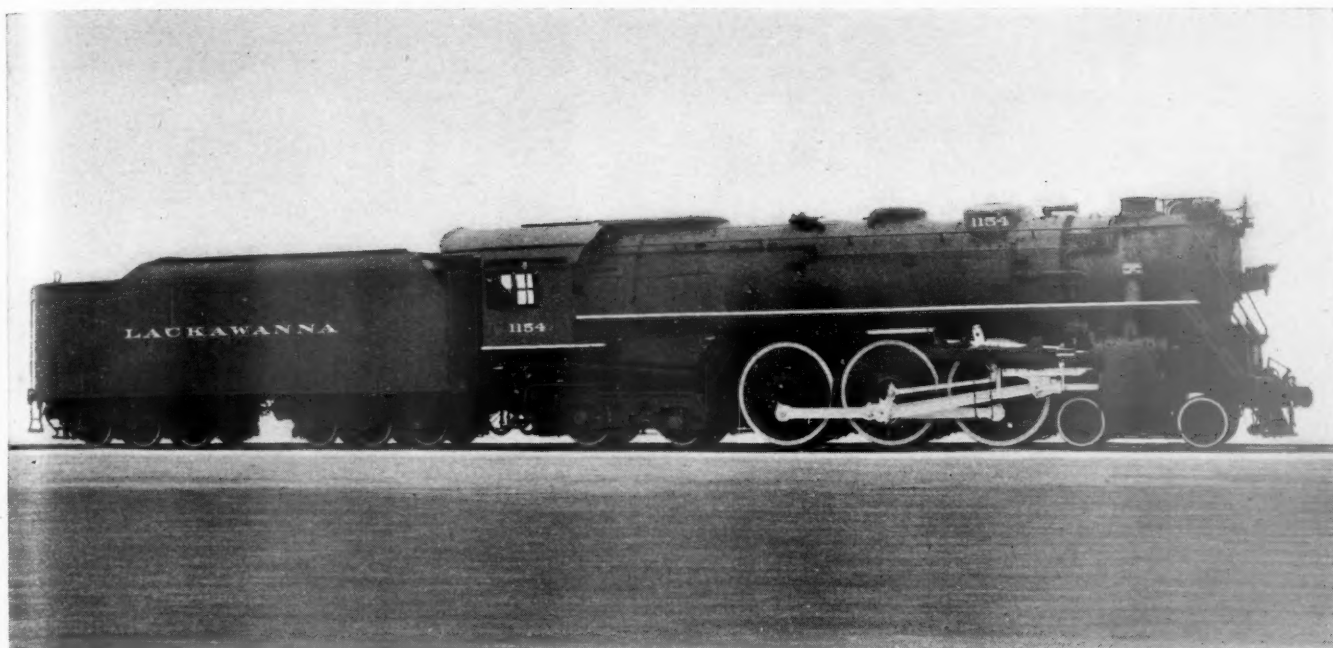
Superheaters • Exhaust Steam Injectors • Feed Water Heaters • American Throttles • Pyrometers • Steam Dryers

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1937—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Net from railway operation	Net railway operating income			
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equip-ment	Traffic		Trans- portation	Total	Operating income	After depreciation— 1937	Before de- preciation— 1936
Green Bay & Western.....	234	\$110,227	\$643	\$114,825	\$20,991	\$22,738	\$6,524	\$38,744	\$93,036	\$19,329	\$9,049	\$30,250
12 mos.....		1,618,126	7,671	1,687,011	338,036	202,396	77,072	566,048	1,240,042	355,861	263,462	319,659
Gulf & Ship Island.....	234	74,022	9,305	96,476	11,937	10,340	2,690	58,623	88,247	91.5	-11,694	-17,541
12 mos.....		1,256,401	115,465	1,543,040	239,238	207,769	35,584	746,801	1,291,818	83.7	-67,095	-20,965
Gulf, Mobile & Northern.....	936	501,810	32,153	561,574	128,512	99,977	39,181	168,999	473,734	84.36	25,214	96,262
12 mos.....		6,897,177	335,217	7,527,129	1,055,739	1,105,975	466,852	2,079,752	5,107,754	2,419,375	1,151,500	1,385,726
Illinois Central.....	4,951	6,719,425	9,990,436	8,301,231	620,027	1,105,579	187,450	3,326,376	5,359,687	97.0	2,741,544	2,978,735
12 mos.....		80,001,628	9,890,436	97,694,402	9,337,931	19,618,595	2,405,783	36,285,448	74,164,837	75.9	23,529,565	20,876,554
Yazoo & Mississippi Valley.....	1,619	1,062,387	101,900	1,256,152	67,750	107,996	30,453	601,950	850,219	67.9	223,314	525,307
12 mos.....		14,211,263	1,053,962	16,321,407	1,262,450	2,284,000	389,936	6,173,337	10,747,677	65.9	5,573,730	264,437
Illinois Central System.....	6,570	7,781,812	1,101,302	9,557,383	685,777	2,133,375	217,903	3,928,326	6,409,906	67.1	3,147,477	3,629,319
12 mos.....		94,212,891	10,944,398	114,015,809	10,600,381	21,902,595	2,795,939	44,458,785	84,912,514	74.5	29,103,295	24,621,177
Illinois Terminal.....	496	376,044	74,920	490,671	51,376	77,865	16,476	180,833	353,732	72.09	136,939	157,702
12 mos.....		4,828,569	856,535	6,196,308	663,773	882,479	195,228	2,027,897	4,006,592	64.66	1,705,517	1,627,049
Kansas City Southern.....	878	913,360	23,367	1,045,487	111,401	161,775	50,394	352,726	741,729	70.9	219,520	257,167
12 mos.....		12,598,015	242,631	14,174,834	1,426,336	2,066,886	596,638	4,172,606	9,048,038	63.8	4,045,311	3,790,703
Kansas, Oklahoma & Gulf.....	326	198,859	664	202,078	21,807	14,171	10,984	47,265	104,951	51.9	97,127	84,247
12 mos.....		2,381,793	6,956	2,424,713	292,504	187,368	108,521	530,436	1,141,038	47.1	1,283,675	1,060,921
Lake Superior & Ishpeming.....	156	34,796	105	36,641	26,107	28,990	770	25,182	86,377	235.7	-49,736	80,019
12 mos.....		2,787,449	1,449	3,267,308	369,715	313,856	9,222	552,745	1,322,749	40.6	1,376,476	1,195,756
Lehigh & Hudson River.....	96	117,128	84	118,069	13,306	22,600	4,139	45,529	92,832	78.6	25,237	66,357
12 mos.....		1,638,356	3,206	1,650,949	199,013	251,931	47,539	564,280	1,149,118	69.6	501,831	484,463
Lehigh & New England.....	215	285,023	.....	286,355	41,702	74,059	8,411	105,428	244,210	85.3	37,925	46,702
12 mos.....		3,689,201	1,591	3,689,201	380,225	839,711	80,279	1,349,838	2,835,402	76.9	853,799	986,600
Lehigh Valley.....	1,307	3,266,373	240,880	3,761,181	235,871	682,164	113,665	1,822,702	2,998,520	79.7	762,661	1,117,273
12 mos.....		42,900,965	2,621,861	48,618,849	3,214,304	9,648,120	1,355,390	20,115,464	37,179,193	76.5	11,439,652	8,488,828
Louisiana & Arkansas.....	606	473,221	12,792	506,135	61,175	69,219	34,286	158,868	344,203	68.0	161,932	88,336
12 mos.....		5,657,831	120,868	5,993,800	785,078	866,529	394,906	1,727,591	4,028,487	67.2	1,965,313	1,405,723
Louisiana, Arkansas & Texas.....	240	75,818	232	80,244	5,597	13,925	5,604	39,793	62,289	77.6	17,955	9,101
12 mos.....		1,238,367	2,722	1,299,925	257,826	138,307	60,272	505,371	1,002,618	77.1	297,307	70,015
Louisville & Nashville.....	4,937	5,633,705	717,982	6,875,975	870,282	1,616,699	200,102	2,700,376	5,687,751	82.7	1,188,224	997,245
12 mos.....		76,863,874	7,208,546	90,194,993	9,841,100	20,605,909	2,264,981	31,690,500	68,104,747	75.5	22,090,246	19,751,759
Maine Central.....	1,009	780,453	96,808	984,584	147,351	208,442	12,690	428,008	822,512	83.5	162,072	232,336
12 mos.....		10,365,537	1,068,081	12,499,153	1,919,951	2,196,059	150,084	4,457,574	9,173,103	73.4	3,326,050	2,616,414
Midland Valley.....	351	120,885	Dr. 30	122,538	6,276	12,869	3,080	33,226	57,695	43.1	64,843	45,263
12 mos.....		1,506,638	140	1,535,244	195,108	147,212	30,634	385,985	827,658	53.9	707,586	520,524
Minneapolis & St. Louis.....	1,528	674,805	13,358	721,338	89,581	86,436	45,920	294,187	554,390	76.9	166,948	93,218
12 mos.....		8,097,687	136,747	8,660,085	1,290,940	1,374,996	506,145	3,499,740	7,124,977	82.3	1,535,108	816,540
Minneapolis, St. Paul & S. Marie.....	4,300	1,575,593	116,447	1,868,767	246,008	376,879	61,795	938,365	1,727,892	92.5	140,887	-20,833
12 mos.....		24,157,245	1,312,002	27,720,658	3,816,855	4,819,339	729,072	11,505,729	22,077,975	79.6	5,642,683	3,573,975
Duluth, South Shore & Atlantic.....	548	119,078	21,061	155,884	18,738	29,132	4,489	82,208	142,786	91.6	13,098	-7
12 mos.....		2,403,070	187,711	2,846,273	428,908	495,053	53,980	1,065,140	2,146,299	75.4	699,974	549,774
Spokane International.....	163	38,864	2,009	47,339	8,697	5,511	2,062	20,502	41,642	88.0	5,697	-1,068
12 mos.....		742,770	17,567	834,371	168,238	90,123	25,926	282,488	625,947	75.0	208,424	129,116
Mississippi Central.....	150	61,378	2,840	66,444	20,428	6,704	7,599	22,345	62,418	93.9	-4,609	-2,476
12 mos.....		872,374	32,024	935,014	237,533	132,754	86,428	270,193	790,217	84.7	142,797	99,419
Missouri-Arkansas.....	364	70,626	1,560	77,611	26,482	10,765	9,334	32,515	89,359	114.8	-11,548	-28,635
12 mos.....		1,049,048	15,646	1,135,476	288,194	137,514	75,342	402,130	961,082	84.6	174,394	24,886
Missouri-Illinois.....	193	84,121	529	86,754	10,781	12,619	3,497	44,178	77,083	88.9	9,671	-6,432
12 mos.....		1,444,334	7,808	1,476,178	279,603	173,430	33,831	472,765	1,023,774	69.4	452,404	379,780
Missouri-Kansas-Texas Lines.....	3,293	1,896,323	225,473	2,391,245	337,657	305,788	120,401	903,161	1,803,904	75.4	587,341	289,773
12 mos.....		26,762,327	2,391,212	31,210,316	4,150,368	5,134,758	1,477,580	11,634,758	24,107,100	75.1	8,013,216	4,166,738
Missouri Pacific.....	7,174	5,797,662	460,545	6,890,242	1,163,653	1,384,070	259,422	2,861,327	5,951,957	86.4	938,285	553,193
12 mos.....		79,229,616	5,664,296	92,418,698	13,258,984	17,650,002	2,979,852	34,039,799	71,471,705	77.3	20,946,993	15,235,189

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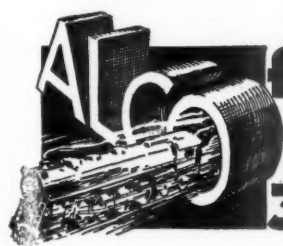


FIRST 4-6-4 TYPE ON THE LACKAWANNA

Designed to handle fast
passenger train service
between Hoboken and Buffalo.

NEW POWER — NEW PROFITS

Weight on Drivers	198,000 pounds	Diameter of Drivers	80 inches
Weight of Engine	377,000 pounds	Boiler Pressure	245 pounds
Cylinders	26 x 30 inches	Tractive Power	52,800 pounds



AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET • NEW YORK • N.Y.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1937—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic			Operating income	After depreciation—1937
Gulf Coast Lines.....Dec.	1,767	\$1,083,756	\$2,869	\$1,220,901	\$196,097	\$206,010	\$46,624	\$457,781	\$955,230	\$265,671	\$78,198
12 mos.....Dec.	1,764	14,398,111	562,414	15,759,766	2,424,973	2,421,825	565,296	4,847,546	10,712,964	5,046,802	2,894,896
International Great Northern.....Dec.	1,154	10,506,265	1,123,440	13,071,957	1,919,850	2,394,104	385,594	5,648,867	11,034,931	2,016,974	109,894
12 mos.....Dec.	1,154	10,506,265	1,123,440	13,071,957	1,919,850	2,394,104	385,594	5,648,867	11,034,931	2,016,974	109,894
Mobile & Ohio.....Dec.	1,194	842,553	36,847	926,030	112,968	226,035	45,080	387,372	816,136	240,279	3,946
12 mos.....Dec.	1,195	11,024,795	415,732	12,104,795	1,568,730	2,625,238	522,009	4,424,011	9,702,026	2,402,769	930,460
Monongahela.....Dec.	1,115	290,755	985	293,916	19,925	32,504	512	83,928	141,056	122,919	47,277
12 mos.....Dec.	1,171	4,421,576	10,793	4,468,539	462,150	366,979	5,774	1,018,584	1,897,111	2,205,812	1,197,132
Montour.....Dec.	56	129,012	.....	131,432	8,556	40,115	934	44,278	105,291	3,117	36,154
12 mos.....Dec.	56	2,447,707	135	2,464,868	164,484	535,645	12,078	615,137	1,427,462	706,313	1,036,774
Nashville, Chattanooga & St. Louis.....Dec.	1,115	739,192	123,637	1,010,496	115,333	277,708	69,236	491,674	1,012,355	56,485	73,532
12 mos.....Dec.	1,118	11,545,556	1,207,133	14,299,433	1,800,822	3,481,510	769,945	5,732,387	12,510,172	912,102	840,290
Nevada Northern.....Dec.	165	45,607	1,027	52,482	9,370	4,435	1,033	11,574	31,686	13,121	16,315
12 mos.....Dec.	165	613,908	15,539	691,856	110,492	46,955	12,329	129,338	354,252	229,924	256,655
New York Central.....Dec.	11,078	17,534,673	6,379,690	27,307,908	3,655,211	6,799,564	547,760	11,861,702	24,276,458	12,153	976,978
12 mos.....Dec.	11,152	257,541,451	66,405,564	366,226,126	41,184,591	79,377,372	6,780,674	139,560,842	284,000,439	50,065,160	36,028,267
Pittsburgh & Lake Erie.....Dec.	233	981,268	60,787	1,089,119	56,029	806,442	26,161	488,866	1,464,092	428,808	213,232
12 mos.....Dec.	233	21,648,674	687,362	23,069,704	2,123,911	8,439,308	333,288	7,333,494	19,281,083	1,870,524	4,137,830
New York, Chicago & St. Louis.....Dec.	1,704	2,586,841	84,468	2,788,764	348,489	449,570	117,447	1,182,421	606,613	436,087	181,427
12 mos.....Dec.	1,704	39,209,271	963,007	41,612,266	4,579,338	6,474,184	1,424,229	14,397,012	28,395,482	10,852,555	7,660,564
New York, New Haven & Hartford.....Dec.	2,028	2,923,999	2,399,204	6,149,658	666,931	1,220,550	1,025,077	2,575,634	4,989,601	730,997	211,616
12 mos.....Dec.	2,033	45,150,055	26,892,165	81,142,587	10,722,384	15,115,786	1,396,337	31,526,432	63,703,268	11,705,259	8,036,330
New York Connecting.....Dec.	20	164,278	.....	174,765	15,352	7,372	.....	33,757	57,843	83,099	66,190
12 mos.....Dec.	20	2,354,293	.....	2,497,952	187,674	93,147	.....	351,433	646,789	1,401,315	1,142,948
New York, Ontario & Western.....Dec.	576	400,596	12,379	462,831	73,805	121,872	13,322	208,430	441,235	14,139	16,878
12 mos.....Dec.	576	5,362,099	508,383	6,480,330	754,128	1,508,145	138,896	3,127,410	5,700,171	233,439	1,040,638
Norfolk & Western.....Dec.	2,200	5,938,538	216,996	6,397,819	883,459	1,190,240	135,240	1,660,069	3,778,925	2,143,035	2,431,196
12 mos.....Dec.	2,202	89,835,839	2,274,594	94,861,503	9,850,867	17,450,618	1,632,689	21,584,642	53,107,344	28,718,668	32,715,282
Norfolk Southern.....Dec.	830	295,873	7,650	319,834	73,769	53,116	24,020	138,659	309,100	38,828	19,270
12 mos.....Dec.	833	4,578,659	93,971	4,871,214	948,893	650,591	138,190	1,790,279	3,885,333	645,128	378,782
Northern Pacific.....Dec.	6,721	3,416,715	419,057	4,273,599	516,711	743,424	150,843	1,991,259	3,758,003	515,596	234,047
12 mos.....Dec.	6,725	54,735,532	4,565,440	64,851,201	7,473,140	14,110,865	2,005,164	24,519,712	52,011,663	6,974,709	10,651,002
Northwestern Pacific.....Dec.	351	127,643	42,970	193,571	77,648	43,023	3,504	161,101	297,054	121,956	131,147
12 mos.....Dec.	351	2,627,962	776,927	3,722,849	689,549	640,800	50,931	2,047,157	3,581,609	64,833	185,017
Oklahoma City-Ada-Atoka.....Dec.	132	34,616	510	37,228	5,081	1,057	1,015	11,504	21,212	11,158	5,549
12 mos.....Dec.	132	481,272	5,531	514,406	111,630	28,901	9,820	137,867	312,001	166,788	86,693
Pennsylvania.....Dec.	10,306	20,426,117	6,335,163	30,135,115	3,013,578	5,996,059	702,483	12,947,662	23,915,079	3,830,219	3,201,381
12 mos.....Dec.	10,312	341,507,648	71,643,262	455,933,509	48,705,175	98,149,650	8,172,987	163,828,923	337,961,293	78,639,465	73,000,926
Long Island.....Dec.	393	482,488	1,220,396	1,798,455	193,192	349,340	7,021	925,106	1,509,990	98,565	7,266
12 mos.....Dec.	395	6,346,697	17,050,548	24,586,449	2,614,956	4,787,660	169,693	11,659,244	19,822,530	1,714,274	176,253
Pennsylvania-Reading Seashore Lines.....Dec.	411	208,867	103,078	330,787	69,494	47,861	7,238	264,187	405,364	136,400	206,327
12 mos.....Dec.	412	3,039,746	2,973,992	6,304,813	941,256	962,263	131,192	3,558,447	5,858,947	565,196	1,733,363
Pere Marquette.....Dec.	2,114	2,145,867	110,597	2,396,220	380,813	521,432	59,621	992,708	2,054,516	247,214	84,952
12 mos.....Dec.	2,115	29,200,150	1,081,006	32,229,110	4,313,144	6,860,148	117,623	11,762,423	24,929,785	5,654,819	4,461,045
Pittsburgh & Shawmut.....Dec.	100	50,734	308	51,677	4,425	21,874	2,624	19,387	53,035	3,028	456
12 mos.....Dec.	100	643,357	3,529	654,962	159,665	210,625	18,160	212,614	649,505	7,664	21,775
Pittsburgh & West Virginia.....Dec.	138	2,280,410	.....	2,280,410	45,545	63,940	16,436	73,892	221,876	3,446	43,228
12 mos.....Dec.	138	3,870,410	6,440	4,092,691	783,473	992,074	17,291	899,939	3,165,132	678,285	1,110,998
Pittsburgh, Shawmut & Northern.....Dec.	190	84,286	12	85,281	8,252	1,335	1,586	33,153	51,292	28,233	20,556
12 mos.....Dec.	190	1,006,232	435	1,026,230	200,428	215,350	16,827	376,566	884,189	136,041	9,506
Reading.....Dec.	1,452	3,690,275	313,265	4,245,231	263,961	700,367	94,451	1,339,723	3,250,374	911,147	970,068
12 mos.....Dec.	1,452	52,449,405	3,518,473	58,754,351	4,683,887	10,753,976	906,902	22,916,414	41,467,934	13,170,097	13,856,835
Richmond, Fredericksburg & Potomac.....Dec.	117	306,860	238,302	772,617	43,963	152,955	10,725	253,859	501,205	169,141	140,876
12 mos.....Dec.	117	4,391,895	2,545,267	8,603,421	874,847	1,635,608	113,701	3,170,827	6,336,810	1,579,342	1,102,567

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Gulf's COMPLETE Line Cuts Costs!

A DAILY RUN OF 512 MILES at speeds as high as 80 miles per hour — that's the kind of locomotive service that makes safe, efficient lubrication a *necessity*.

Here are the Gulf products which have helped this leading road make substantial cost reductions in the operation of a group of locomotives like the one above: Gulf Superheat Valve Oil, Gulf Rod Cup Grease, Gulf Driving Journal Compound, Gulf Hubliner Grease, Gulf Engine Oil, Gulf Car Oil.

The use of these quality lubricants — plus Gulf engineering service — is a real safety measure in

locomotive operation. Gulf's large technical staff keeps abreast of every mechanical development in railroad equipment. They work closely with the operating men, recommending such improvements in lubrication practice as are needed to provide for the conditions encountered. This careful attention to lubrication pays a generous reward in lowered maintenance and repair expense.

Isn't it more than likely that the lubrication of your equipment is susceptible to further improvement? Talk with the Gulf engineer when he calls. He can give you helpful suggestions.

Gulf Oil Corporation



Gulf Refining Company

GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1937—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Net railway operating income			
		Freight	Passenger	Total (inc. misc.)	Way and structures	Equip-ment	Traffic			Trans- portation	Total	Operating income	After depreciation—1937	Before depreciation—1936
Rutland	407	\$142,110	\$29,037	\$236,231	\$27,894	\$62,059	\$10,193	\$148,105	\$259,563	\$74,193	\$70,805	\$12,090	—\$59,486
St. Louis-San Francisco	4,885	2,320,324	320,904	3,421,060	514,856	906,426	120,403	1,638,650	3,261,955	91,789	70,088	99,504	45,778
St. Louis-San Francisco	4,911	40,967,464	3,775,072	49,020,519	7,317,752	11,301,880	1,367,275	19,124,170	41,273,268	7,747,251	4,552,686	5,880,915	8,112,681
St. Louis, San Francisco & Texas	261	110,497	973	118,342	25,865	14,151	8,503	59,678	115,303	—4,909	—1,321	—16,956	—1,220
St. Louis Southwestern Lines	1,706	1,488,067	7,328	1,564,236	335,326	171,323	91,387	680,735	1,362,273	135,839	201,072	438,277	—199,852
St. Louis Southwestern Lines	1,729	19,845,445	354,458	21,115,983	3,412,747	3,538,578	89,932	602,077	1,177,615	294,054	150,641	319,224	201,033
Seaboard Air Line	4,317	2,989,348	571,397	3,947,368	575,644	806,627	178,589	1,409,863	3,167,481	779,887	1,102,937	2,227,179	2,826,267
Seaboard Air Line	4,317	33,030,229	5,532,973	42,790,878	5,960,010	8,665,811	1,942,287	15,815,281	34,737,510	801,282	5,501,438	288,074	1,145,462
Southern Railway	6,611	5,448,201	981,784	7,111,793	629,872	1,257,143	168,569	2,992,857	5,388,632	1,304,127	1,304,127	920,548	3,618,042
Southern Railway	6,637	79,427,928	10,418,555	98,435,414	12,102,996	19,165,557	1,814,507	34,881,428	71,811,204	19,298,273	15,112,246	19,298,273	18,225,326
Alabama Great Southern	315	360,107	72,942	475,348	10,275	100,523	14,558	180,824	330,028	74,279	122,049	37,772	158,227
Alabama Great Southern	315	6,095,624	733,313	7,328,179	979,933	1,636,074	153,742	2,293,835	5,330,358	1,323,755	1,252,744	905,801	1,556,829
Cinn., New Orleans & Texas Pacific, Dec.	336	932,762	146,658	1,168,244	107,388	272,777	30,404	330,623	797,279	313,332	374,751	458,698	443,177
Cinn., New Orleans & Texas Pacific, Dec.	336	14,536,069	1,359,208	16,943,744	2,005,319	3,262,947	325,610	4,252,348	10,493,907	5,013,535	4,874,610	4,936,368	5,496,090
Georgia Southern & Florida	397	119,600	56,874	203,562	25,017	37,894	900	84,885	156,768	69,879	68,674	72,630	75,226
Georgia Southern & Florida	397	1,590,028	538,822	2,408,078	402,815	493,468	20,985	954,357	1,963,818	283,233	241,741	137,524	322,511
New Orleans & Northeastern	204	187,368	26,209	231,571	39,392	35,513	6,481	87,628	142,647	92,122	61,583	43,536	67,553
New Orleans & Northeastern	204	2,794,884	269,856	3,276,273	397,499	427,963	69,746	995,097	2,028,845	848,082	596,414	406,102	668,509
Northern Alabama	100	46,564	1,923	50,211	1,496	1,496	1,211	17,275	16,342	35,467	32,004	33,317	32,049
Northern Alabama	100	744,676	21,471	788,578	131,186	18,145	15,881	356,242	432,336	291,351	142,653	132,359	143,248
Southern Pacific	8,757	8,858,632	2,134,310	12,309,071	1,215,161	1,658,189	362,612	5,488,667	9,628,355	1,626,349	983,036	5,780,469	1,502,803
Southern Pacific	8,766	132,457,688	23,416,723	170,744,278	16,717,014	28,947,507	4,164,474	69,611,312	130,395,352	26,856,668	18,122,240	28,399,940	24,218,496
Southern Pacific Steamship Lines .....	....	450,201	9,825	493,006	30,894	143,892	19,183	428,243	642,858	—165,592	—166,025	11,304	—130,824
Southern Pacific Steamship Lines .....	....	6,935,970	291,370	7,154,911	230,666	1,254,763	214,875	5,621,824	7,140,522	—182,435	—246,116	—5,246	175,695
Texas & New Orleans	4,420	2,940,913	378,007	3,666,554	476,255	709,532	1,22,396	1,404,346	2,939,760	507,884	290,975	1,177,714	427,103
Texas & New Orleans	4,423	39,250,147	3,735,926	46,717,723	6,815,329	8,357,953	1,518,716	16,468,979	35,976,801	7,431,256	4,740,156	5,691,986	6,334,569
Spokane, Portland & Seattle	946	555,275	45,262	651,962	108,792	56,824	10,612	243,707	449,284	96,421	52,042	220,707	70,907
Spokane, Portland & Seattle	946	7,714,920	568,382	8,909,860	1,203,182	1,049,754	117,547	3,292,922	6,011,980	2,255,553	1,537,357	1,475,507	1,727,529
Tennessee Central	286	166,566	4,980	182,717	826	25,099	6,556	79,225	121,443	47,135	29,489	49,260	35,555
Tennessee Central	286	2,312,965	61,498	2,512,134	392,619	372,162	75,597	886,614	1,846,310	545,634	334,451	471,851	406,219
Texas & Pacific	1,936	1,940,071	266,360	2,424,694	332,313	483,124	71,276	828,269	1,833,789	351,976	256,882	469,261	351,362
Texas & Pacific	1,943	25,132,589	2,820,677	30,350,072	3,384,032	5,586,318	952,576	9,382,967	20,924,145	7,078,241	5,512,247	5,278,459	6,663,571
Texas Mexican	162	79,204	364	92,958	19,972	21,414	3,521	46,534	96,313	—32,645	—42,443	—1,886	—40,599
Texas Mexican	162	1,293,896	6,100	1,466,765	227,083	220,088	42,340	503,634	1,079,872	304,585	206,327	157,461	228,452
Toledo, Peoria & Western	239	152,266	1	155,094	38,170	14,743	21,000	51,103	138,172	30,968	15,439	49,897	25,793
Toledo, Peoria & Western	239	2,358,890	14	2,393,236	560,574	178,767	214,770	587,110	1,683,240	509,544	306,564	358,130	423,766
Union Pacific System	9,911	9,322,325	1,500,008	12,094,923	754,523	2,024,645	434,224	4,499,091	8,428,277	3,101,629	2,315,822	3,893,026	2,896,108
Union Pacific System	9,913	130,699,110	17,320,898	162,064,311	17,723,360	30,309,226	4,666,454	54,668,796	116,834,579	45,229,732	22,886,260	25,070,627	29,723,741
Utah	111	121,827	....	122,097	10,674	45,246	491	31,288	92,155	19,991	22,049	13,895	32,072
Utah	111	1,241,903	....	1,243,853	186,074	412,066	22,807	320,813	977,807	151,023	140,423	191,221	260,222
Virginian	618	1,803,697	4,688	1,867,944	93,592	296,889	22,807	297,084	740,246	892,698	818,940	939,123	892,926
Virginian	618	19,389,927	48,140	20,181,642	1,443,436	3,818,587	258,420	3,193,158	9,060,041	8,604,601	9,436,413	9,068,959	10,548,855
Wabash	2,433	3,038,663	268,786	3,383,687	476,624	458,457	158,788	1,571,204	2,742,466	676,551	408,462	1,078,391	587,720
Wabash	2,436	40,370,042	2,679,923	46,133,734	6,039,832	8,334,097	1,851,911	17,868,060	35,829,683	7,850,569	4,247,856	6,147,522	6,303,085
Ann Arbor	293	263,031	3,810	274,039	10,174	64,595	13,168	144,343	238,216	18,330	9,792	66,776	28,045
Ann Arbor	293	3,729,120	49,500	3,920,393	334,928	910,704	151,102	1,704,852	3,238,940	454,926	294,065	428,221	521,680
Western Maryland	879	1,265,946	7,765	1,308,630	115,125	309,877	39,350	367,815	877,342	353,917	358,967	509,214	458,452
Western Maryland	880	17,065,348	97,198	17,266,270	3,708,120	473,203	4,673,709	11,578,422	23,378,422	4,740,477	4,840,822	4,784,216	6,003,268
Western Pacific	1,207	927,276	20,164	947,442	157,248	252,156	56,064	517,633	1,034,125	—129,847	—209,408	312,205	—156,559
Western Pacific	1,207	15,452,515	437,469	16,310,973	3,627,213	3,669,487	696,190	6,683,022	15,311,709	—227,190	—805,094	111,985	—156,996
Wheeling & Lake Erie	512	832,747	3,052	866,982	138,097	235,338	43,426	359,030	822,841	—82,761	—22,211	565,150	55,137
Wheeling & Lake Erie	512	15,139,856	24,806	15,970,839	1,995,498	3,328,132	422,187	5,062,633	11,172,293	3,046,546	4,222,222	3,751,632	3,751,632